

CA1BS11  
C203



3 1761 11726115 6

11-  
203

Government  
Publications



Government  
Publications





# canada 1972


english edition

Government  
Publications









Digitized by the Internet Archive  
in 2023 with funding from  
University of Toronto

<https://archive.org/details/31761117261156>







canada 1972

The Annual Handbook  
of present conditions  
and recent progress

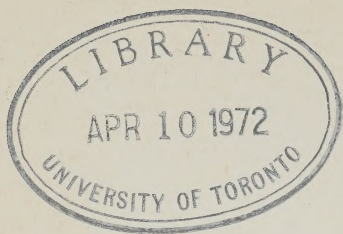
*Prepared in the*  
Year Book Division



Statistics  
Canada

Statistique  
Canada

*Published under the authority of*  
the Honourable Jean-Luc Pepin  
Minister of Industry, Trade and Commerce



© Crown Copyrights reserved

Available by mail from Information Canada, Ottawa,  
and at the following Information Canada bookshops:

**HALIFAX**

1735 Barrington Street

**MONTREAL**

AEterna-Vie Building, 1182 St. Catherine Street West

**OTTAWA**

171 Slater Street

**TORONTO**

221 Yonge Street

**WINNIPEG**

Mall Center Building, 499 Portage Avenue

**VANCOUVER**

657 Granville Street

or through your bookseller

Price: \$1.50      Catalogue No. CS11-203/1972

Price subject to change without notice

Information Canada

Ottawa, 1971



# preface

Government  
Publications

*Canada 1972* is the 41st annual edition of the handbook *Canada*. It presents a view of life in this country and a summary of recent economic, social, and cultural developments. Textual and statistical material has been provided by various divisions of Statistics Canada, by other government departments, and by special contributors. Articles on Canada's geography, climate, Arctic, history, government, religion and economics are features of this edition. The illustrations have been selected from a wide range of governmental, commercial, press, and private sources. The artwork was executed by the art section of Statistics Canada under the direction of Denis Laframboise, and the charts by the drafting section, under the direction of Laurent Tessier.

*Canada 1972* was planned and produced by Constance McFarland, Editor, and the Year Book Division staff, under the direction of Pierre Joncas, Director of the Division.

*Walter E. Duffett.*

September 1971

Chief Statistician of Canada





# contents

<b>The Land and the Environment</b> . . .	1	Industrial Growth . . . . .	186
Geography . . . . .	1	Economic Council of Canada . . .	192
Climate . . . . .	14	Natural Wealth . . . . .	197
The Canadian Arctic . . . . .	21	Agriculture . . . . .	197
<b>The People and Their Heritage</b> . . .	28	Forestry . . . . .	218
History . . . . .	29	Fisheries . . . . .	224
Native Peoples . . . . .	37	Minerals and Energy . . . . .	228
The Arts . . . . .	47	Business, Finance, and Industry .	246
Scientific Activities . . . . .	63	Capital Expenditure . . . . .	246
Religion . . . . .	77	Housing . . . . .	249
Recreation . . . . .	81	Government Finance . . . . .	252
Population . . . . .	88	Banking and Savings . . . . .	259
<b>Governments and Their Services</b> . .	98	Insurance . . . . .	262
Government . . . . .	99	Labour Participation . . . . .	263
Citizenship . . . . .	109	Earnings and Hours of Work . .	266
Education . . . . .	111	Manufacturing . . . . .	267
Health and Welfare . . . . .	119	Domestic Trade . . . . .	272
Labour and Manpower . . . . .	138	Transportation . . . . .	282
Regional Economic Expansion . .	147	International Trade . . . . .	298
Consumer and Corporate Affairs .	148	Mass Media and Communications	314
External Relations . . . . .	150	Telephones and	
<b>The Economy</b> . . . . .	172	Telecommunications . . . . .	314
Economics . . . . .	173	The Post Office . . . . .	318
Economic Growth . . . . .	180	The Press . . . . .	318
		Films . . . . .	319
		Broadcasting . . . . .	322
		Libraries and Archives . . . . .	327
		<b>Acknowledgements</b> . . . . .	330
		<b>Index</b> . . . . .	333

# the land and the environment

the land and the environment

the land and the environment

the land and the environment

the land and the environment

the land and the environment

the land and the environment

the land and the environment

the land and the environment

the land and the environment

the land and the environment

the land and the environment

the land and the environment

the land and the environment



## Geography

Canada's approximately 3,852,000 square miles of territory are compactly distributed within an area extending 3,223 miles from east to west, and 2,875 miles from north to south. Within this immense extent there are mountain ranges and plains of continental proportions, and pronounced contrasts in climate and vegetation.

The over-all pattern of landforms is simple. The interior of the country is a vast plain-like surface bounded on the east and the west by great systems of mountains, but with no highland rims to the north or south. The plain extends about 1,900 miles from the Rocky Mountains to the Appalachians, but narrows to 1,000 miles along the Arctic Coastal Plain. In the north the plain ends in the islands of the Arctic Ocean, and in the south it continues into the United States and carries beyond the Missouri River and the Great Lakes to the Gulf of Mexico. This plain in Canada is composed of ancient down-worn rocks called the Shield, fringed on the north, west, and south by gently overlapping Palaeozoic sedimentary beds, succeeded by much younger Mesozoic sedimentaries on the west extending to the Rockies. Parts of this area rise into local hills and plateaus, and parts of the plain



are below sea level and form Hudson Bay and the channels between the Arctic islands. On the eastern coast of Canada is a highland rim in the form of a great promontory jutting into the Atlantic Ocean, with its apex in the Island of Newfoundland. The southwest-northeast trending arm of this promontory is the Appalachian Mountain System, flanked by the Atlantic Ocean on one side and the St. Lawrence Lowlands on the other. The southeast-northwest trending part of the promontory, the Northeast Seaboard Mountains, begins on the Labrador coast, and increases in height to the north in Baffin, Axel Heiberg, and Ellesmere Islands. This eastern highland rim, extending from the Eastern Townships and Nova Scotia to Ellesmere Island, is broken by three great inlets and straits: the Gulf of St. Lawrence, Hudson Strait, and Lancaster Sound. On the western side of Canada lies the other highland border zone, the Cordilleran Region. This is a much higher, wider, and more continuous system of mountain ranges and plateaus than the eastern rim, and has no great inlets to the interior.

About 97 per cent of Canada was covered by glacier ice within the last million years so the surface features of both plains and mountains have been modified by glaciation. 17,000 years ago ice still extended over most of the country so that the uncovering of Canada from these ice sheets is a very recent geographic event. Approximately 1 per cent of Canada is still covered by glacier ice, in the Arctic islands, particularly on the mountains in Ellesmere, Axel Heiberg, Devon, and



Baffin Islands, and in the Cordilleran region. Many of the mountains in the Cordillera owe their angular features to the work of alpine glaciation. The Appalachians also were glaciated but were not high enough to acquire the serrated edges and horns which result from classic alpine glaciation of lofty ranges. The great interior plains have the more attenuated glacial features which result from the advance and melting-down of great continental ice sheets. Surface materials and even bedrock were scoured by the advancing ice and carried away to be laid down elsewhere in unsorted deposits called glacial till. Glacial meltwater also carried material away from the margins of the ice and when the material was deposited by these streams it was sorted into sands and gravels. Lakes existed at the edges of the glacier ice during the melting-down of the ice sheets and great quantities of material, generally of a fine texture, were deposited in them. Once the ice retreated many of the lakes were drained leaving extensive clay plains. Rivers carrying away meltwater eroded great channels in softer sedimentary rocks, which are now occupied by small "underfit" streams. Thus glaciation has left a wide variety of features on the plains which affect the uses man can make of an area.

Though Canada is bordered by three oceans, the Atlantic, Arctic, and the Pacific, the great size of the land and the barrier ranges of mountains along the Pacific coast, blocking off milder maritime air in the zone of the westerlies, give most of the country a continental climate. Extending from  $41^{\circ} 41' N$  to  $83^{\circ} 07' N$  much of Canada lies in high latitudes so that with the exception of a few coastal areas on

This glacier forms part of the Columbia Icefield in Alberta and British Columbia.



the Pacific, all parts of the country have pronounced cold weather in winter. Forests and grasses flourish in the south, but trees become sparse towards the north where the winters get longer and temperatures more severe. The transition line from tree to tundra extends from the Labrador coast along Ungava Bay and across northeastern Quebec, dips south along the coast of Hudson Bay, then trends north-westward from Churchill to the shores of the Arctic Ocean near the mouth of the Mackenzie River. North of this lies tundra: mosses, sedges, lichens, and dwarf shrubs in low areas sheltered from the winds.

## The Appalachian Region

The Appalachian Mountain System terminates in the Atlantic Ocean in a dispersed cluster of peninsulas, islands, gulfs, embayments, and straits. The Strait of Belle Isle, Cabot Strait, and the Gulf of St. Lawrence are as much a part of the region as the peninsulas of Gaspé and Nova Scotia, the Island of Newfoundland, and the hills of the Eastern Townships. The Appalachian System, trending from southwest to northeast, is about 360 miles wide.

To the Indians this forested land with its many rivers was a good area for hunting and fishing. When Europeans first came to settle they found primary resources with which they were familiar: fish, forests, land for cultivation in a climate comparable to that of Europe, and minerals such as coal. All this was just a transoceanic journey away from Europe, but there were rival areas open for settlement in the New World, some with more attractive climates, so that development proceeded slowly.

Rock in the area around Peggy's Cove is granite, formed in the Devonian period 350 to 400 million years ago.







Port de Grave and Ship Cove on Conception Bay, Nfld.

Exploiting the fisheries presented no problems. The great off-shore banks were fished by Europeans from at least the beginning of the 16th century, and have remained a substantial primary resource to this day. The climate was favourable for agriculture but the soil resources were confined to limited areas of good land in the lowlands, except on Prince Edward Island where they were more extensive. There were no formidable technological problems to be overcome in farming, but the resources were somewhat grudging. The earliest European farmers, the Acadians, chose not to clear the forests in the valleys of Nova Scotia and New Brunswick, but drained the tidal flats of the shores of the Bay of Fundy to establish their farms. Later, trees were cleared in the lowlands and valleys and pockets of cultivatable land were produced. That was a main task of the 18th and 19th centuries, yet even today less than 1 per cent of Newfoundland, 3.6 per cent of Nova Scotia and New Brunswick, and 41 per cent of Prince Edward Island is improved agricultural land. In the early 19th century forests became a great resource of the region, especially in New Brunswick, in the age of timber exports to Europe and the building of wooden ships. Today forests are still very important, particularly as raw materials for pulp and paper. Minerals began to prove a significant resource in the late 19th century. Coal was mined in Cape Breton Island, mainland Nova Scotia, and elsewhere, and iron ore in Newfoundland. Base metals are now mined in New Brunswick and Newfoundland. The development of these various natural resources was not inherently difficult, but progress was handicapped by the existence of vast quantities of similar resources in other parts of the New World. Consequently the Atlantic region developed slowly as European settlers moved into other regions where the natural resources, except for fish, were available on a larger scale.



The Thousand Islands bridge joins Canada and the United States at Ivy Lea, Ont.

The Atlantic region has easy water access to Quebec, but land communications were effectively cut off for many years by the mountain ranges of the Gaspé. But in the 1870's the Notre Dame range was crossed by the Intercolonial Railroad, following the Matapedia Valley, which rises only to 751 feet above sea level, and good all-year connections were established with the rest of Canada.

### **St. Lawrence Lowlands**

Between the Appalachians and the Shield lie the St. Lawrence Lowlands, connecting the vast plains in the heart of the continent to the Atlantic Ocean. The Lowlands are formed of nearly horizontal Palaeozoic rocks, over 300 million years





Autumn colours in the Assomption Valley, Que.

old. The Palaeozoic plain is not continuous. It is broken below Lake Ontario by a 30-mile wide down-worn belt of Precambrian rocks, called the Frontenac Axis, creating the Thousand Islands in the St. Lawrence River.

East of the Frontenac Axis the Lowlands are about 75 miles wide at Montreal but they narrow towards Quebec. The Laurentide Scarp, marking the edge of the Shield, is the boundary to the north, and "Logan's Line," a fault zone, is the boundary on the south with the Appalachians, but the plain itself is dominated by the St. Lawrence River. Most of the land is flat, less than 500 feet above sea level.

West of the Frontenac Axis, in Ontario, the plain is over 150 miles wide. Here the Palaeozoic strata gently overlap the Shield, with only a low escarpment marking the junction at a few places. Lakes Ontario, Erie, and Huron, form the boundary to the south and west.



When Europeans came to this region in the early 17th century, they found that some Indians were growing crops. Europeans started farming in Quebec in the early 17th century. No significant adaptations had to be made in agricultural practices, because the soils and climatic conditions did not differ greatly from the homeland. The great challenge was clearing the magnificent hardwood and softwood forests to prepare a seed bed for crops. The task was started in the 17th and 18th centuries in Quebec, and finally completed in the mid-19th century in Ontario. A very rich farming area emerged. But clearing the land resulted in gully-ing and stream erosion in some areas, and in the early 20th century movements toward soil conservation were begun to protect the land. Most of the agricultural lands of Quebec and Ontario lie in the St. Lawrence Lowlands, and it is the farms in this area that make Ontario the leading farming province in Canada by value of production. Other primary resources such as timber and petroleum, which were developed in the 19th century, are exploited today, but agriculture was the great primary resource and remains so.

The story of the development of this region is not linked to the primary resources of the region alone. Of great importance is the great river, the St. Lawrence, and the Great Lakes, which make communications with other parts of the continent and with markets overseas relatively easy. Gradually this region began to dominate the commerce of the country, and it also became the industrial centre of Canada, based on local agriculture, the timber, minerals, and hydro-electric power of the nearby Shield, the advantages of being close to the industrial belt of the United States, and tariff protection. Today this region has about one half the population of Canada, and the two leading metropolitan centres.

### **The Shield and Associated Plains and Mountains**

Most of northern Canada is composed of the Shield, which is formed of rocks of Precambrian age ranging from over 4,000 million to about 570 million years old, and associated sedimentary formations of Palaeozoic age, 570 to 225 million years old, and some younger rocks. The Shield is by far the largest and oldest structural feature in Canada, and has an enormously complex geological history. It and the northern Palaeozoic and Mesozoic plains and mountains are distinctive within Canada, because, compared to the southern regions, this is the land where on account of climatic and soils limitations agriculture not only is not developed but is not even possible. There are exceptions such as the Great Clay Belt and the Lake St. John area. Yet, there are other primary resources which invite challenges and are open to exploitation if the effort is made. About half of the Shield is covered with boreal forests, which are a potential, and in many places a realized, resource. However, north of the treeline and west of Hudson Bay, the tundra landscape is known as the Barren Ground, and the Arctic islands are largely bare plains and plateaus locked in by ice much of the year. The complex geological history of the Shield resulted in considerable mineralization. Many ore bodies have been found and as prospecting continues there will likely be many more. In the Palaeozoic plains of the far north there are possibilities of petroleum discoveries.

The image of this region is that of a frontier to the great majority of Canadians, who live on the sedimentary plains at the southern and western fringes of the



Forests and lakes characterize large areas of Manitoba.

Shield, and often speculate on what can be done with this land. Attitudes have varied. In the 17th century the animals inhabiting the Shield were a great resource for Europeans. Exploitation of furs was pushed north and west from the St. Lawrence, and simultaneously southeast, south and westward from Hudson Bay, until the interior plains and the Cordilleran Region were reached. Then in the late 18th and early 19th centuries another resource was developed, when the onslaught on the forests began from the St. Lawrence and the Ottawa Rivers.

Farther north Europeans were active in the 16th and 17th centuries seeking the North West Passage in the straits of the archipelago, but with little success. The search was taken up again in the 19th century and though much of the region was mapped, no passage fit for commercial use was found. But in the 19th century as well, Canadians and others began to think of a transcontinental railroad from the St. Lawrence River to the Pacific Ocean, but the rugged Shield and the Cordilleran mountains were formidable barriers. A wonderful route for the canoes of the fur-traders, the lakes and rivers of the Shield, together with muskeg and rough terrain, blocked easy land transportation. Building roads across the Shield had to wait



until the mid-20th century, but a railroad was finally completed across that difficult country in the 1880's, and two more in the first two decades of the 20th century. Thus, the St. Lawrence Lowlands and the interior plains were linked despite the almost 1,000 mile-long barrier of the Shield. But the Shield remained a negative area to farmers, even though relatively small districts in the clay belts were settled.

Mining was another matter. In the mid-19th century attempts were made to exploit the minerals of the Shield, and these endeavours gained strength with railroad building and improved accessibility. Accompanying the mining activity was the development of pulp and paper mills, and hydro-electric power installations, so that in this century the Shield has been looked at with new eyes again, as a great storehouse of resources and wealth.

In this century the Shield has become one of the great vacationing areas of the continent, and tourists are pressing farther and farther northward. The magnificent scenery of the Far North remains, and in the future it is very possible that closer contact between the southern settled lands and this region will come about as increasing numbers of tourists visit the mountains of Baffin, Ellesmere, and Axel Heiberg Islands.

Stooked grain fields and autumn foliage near Edson, Alta.





## The Interior Plains

Overlapping the Shield on the west, from Lake of the Woods all the way to the Arctic Ocean, and extending to the Cordilleran Region, are the Interior Plains. This is the youngest of the great physiographic regions of Canada, and simplest in structure. It is composed of sedimentary Palaeozoic beds, 500 to 225 million years old, with much younger Mesozoic and Cenozoic rocks, ranging from 225 million to 1 million years in age, lapping over them. The Plains are nearly 800 miles wide at the 49th parallel, 600 at the 56th, and narrow to less than 200 miles at 64° as the Shield trends close to the Franklin Mountains. But then the Plains expand again to about 500 miles wide near the Arctic coast.

The southern part of the region is grassland, but north of the North Saskatchewan River forests predominate. Between the grassland and the forest is the aspen-grove transitional vegetation zone. Europeans, familiar with more humid climates, found the southern grasslands a perplexing country to settle and develop because of the low precipitation, ranging from 12 inches to over 20 inches annually. Fur-traders even called it the Barrens, because it was bare of trees. But this term did not imply that the area was deficient in resources. Even in the days of the fur trade the grasslands possessed a great resource, the buffalo, on which the Indians, the Métis, and the traders themselves depended for food. Then perceptions changed.

In the mid-19th century when the plains were first deliberately evaluated for potential agricultural use, these lands were regarded as an extension of the "Great American Desert" with a "Fertile Belt" suited to farming, in the aspen-grove zone along the North Saskatchewan River. But in the 1880's the Canadian Pacific Railway built its tracks across the southern plains which just 20 years earlier had been regarded as too arid for settlement, and the railroad attracted settlers to the grasslands. Ranching had already been started but the newly arrived farmers had problems. Technological innovations such as dry farming and irrigation were adopted, new varieties of wheat with shorter growing seasons were introduced, and settlers gradually converted this land into a rich agricultural domain. It has remained a region of constant challenge. Drought years in the 1930's were disastrous to farmers, and further technological and institutional modifications had to be made. Thus this is a region where adjustments to a semi-arid environment are becoming a way of life to a people who originally came from humid areas. Even the face of the land is being transformed through the Prairie Farm Rehabilitation Act by damming rivers and creating many local lakes for water conservation and day-to-day recreational use. For longer vacation periods the prairie residents have easy access to the higher forested country in their midst in the Riding and Duck Mountains and the Cypress Hills, to the Shield to the east and north, and the Cordilleran Mountains to the west.

Great mineral wealth has been found in the sedimentary beds, which supplements the income derived from agriculture. Oil, natural gas, and potash are produced in the southern plains, and oil and natural gas occur in the sedimentary formations in the Mackenzie River area to the north as well, and there are enormous reserves of oil in the Athabasca tar sands of northern Alberta.

## Cordilleran Region

The Cordilleran Region, about 500 miles wide and 1500 long, includes the greatest complex of mountain systems and plateaus in Canada. The rocks range in age from Precambrian to Cenozoic. Two mountain systems dominate: the Rocky Mountain Area, the Continental Facade, on the east and the Coast Mountain Area on the west. The Rockies are seldom more than 60 miles wide, but together with the Mackenzie, Selwyn, and Richardson Mountains to the north, they form an almost continuous series of ranges from the 49th parallel to the Arctic, with only a few gaps which can be used as passes.

In a region of such varied terrain there are diverse resources. The mountains have splendid softwood forests especially in the Insular and Coast ranges where the precipitation is extraordinarily heavy, attaining 100 inches or more annually. By contrast parts of the interior are arid, even reaching desert conditions in marked rain shadow areas. Besides forests the primary resources include minerals, hydro-electric power, and fish in the Pacific Ocean and the rivers, and there is some agriculture in the valleys, for example in the Okanagan and Lower Fraser valleys.

Between the towering mountain ranges of the Cordillera are found flats and valleys such as this near Creston, on the Kootenay River, in British Columbia.





Late afternoon sunlight on the summit of Rogers Pass in the Rockies.

The region was first exploited for furs in the early 19th century from Montreal and Hudson Bay, and experienced a gold rush in the 1860's in the Fraser River country. Furs and gold are valuable commodities by weight and can stand the cost of being sent to distant markets, but this is not true of other staples and this delayed development. The special qualities of the region are reflected in the history of exploiting commodities such as lumber, pulp and paper, fish, and base metals. The cost of processing such commodities, that is, establishing canneries, mines, refineries, saw and pulp mills; of surmounting internal communications difficulties; and of shipping goods to distant markets meant that exploitation of primary resources required large capital investments in order to produce staple goods in sufficient quantities to justify such expenditures. But the natural resources are enormous and have borne the immense costs of exploiting them for commercial use. Recreation is another very important industry. The Cordillera is a spectacular land of splendid rugged scenery and it has become one of the great vacationing grounds of the continent, in both summer and winter. And on the coast the climate is mild enough that Victoria and Vancouver have become retiring places for many people from other parts of Canada.

JOHN WARKENTIN



## Climate

Whereas weather refers to meteorological conditions at a specific time, climate may be defined as the general or average state of the weather. In a country as large as Canada, there are many climates since conditions vary greatly from place to place. Information about Canadian climates is derived from observations recorded over many years by thousands of weather observers at hundreds of locations across the country. A weather observing station may be equipped only with a rain gauge—a funnel of standard size and shape for catching the rain and measuring it. Other stations have in addition a pair of thermometers mounted in a standard louvered screen which record the highest and lowest temperatures reached each day. The complex meteorological observing installations at airports and agricultural experimental stations are staffed by specially trained technicians to observe and record such things as wind, humidity, radiation, pressure, and cloud, in addition to temperature and precipitation. In all, there are over 2,300 weather observing stations in Canada, of which about 250 are of the more complex type.

Because the weather varies from year to year, it is necessary to maintain weather observing stations over a long span of time in as many locations as possible to



A rainbow can be seen only when the sun behind the observer falls on water drops in front of him. The sun's rays are sent back to him by a combination of refraction and reflection within the drops. The larger the drops the more brilliant the rainbow.

ensure that the weather in one or two abnormal years does not unduly affect the record. In temperate latitudes it has been found that a period of thirty years is sufficient to adequately test the normal range of the Canadian climate. However, observations covering a longer period are of interest and help to tell whether or not the climate is changing. Each year the Canadian Meteorological Service receives the records of between two and three million individual observations taken throughout the country. By the application of suitable methods, this enormous mass of data is made to yield a clear picture of Canadian climates.

The source of energy for all atmospheric motions is ultimately the solar radiation absorbed by the atmosphere and, to a much greater extent, by the earth's surface. The latter's energy is then transferred to the air by conduction, convection, and long-wave radiation. In Canada during the winter less energy is received from the sun than is given out, and in summer this is true of the northern islands also. The deficiency is made up by the transfer of heat from more southerly latitudes by the exchange of warm air for cold. This is affected by means of counter-clockwise circulation around areas of low pressure which in turn move in a wave-like (and generally west-to-east) path.

As a result of the movement of these lows, locations in Canada are subject to air from a different source every few days. This leads to the continual variation in weather conditions with which all Canadians are familiar. Thus, average values do not tell the whole story and, in fact, the variation is part of the climate, a fact that should be kept in mind when looking at the averages. In Calgary the mean January temperature is 14.2°F but, in the nearly 90 years that records have been kept, values as high as 61°F and as low as -48°F have been experienced.

## **The British Columbia Coast**

Because of the general west to east movement of air over the coast, and because of the series of north-south mountain barriers across the province, the British Columbia coast is seldom visited by cold air from the northern interior. As a result, temperatures show the relatively small seasonal variation characteristic of large bodies of water, and there are mild winters and cool summers. In summer, an eastward extension of the semi-permanent high-pressure area over the Pacific Ocean brings mostly fine weather to this portion of Canada. In winter, deep low-pressure areas sweep over the coast from the Gulf of Alaska, so that the bulk of the precipitation falls in that season. On-shore winds driven up the windward slopes of the mountains cause heavy rains along the coast. Some places on Vancouver Island have the heaviest rainfalls in Canada with annual totals of more than 200 inches a year. On the northern section of the coast a large portion of the winter precipitation falls as snow and seasonal totals of 200 to 300 inches are common. The total snowfall at Kildala Pass averaged 765 inches a year over a five-year period.

## **The British Columbia Interior**

By the time they reach the interior of British Columbia the rain-bearing winds from the Pacific Ocean have lost a good deal of their moisture by forced ascent over the mountains, so that the interior valleys of British Columbia are relatively



Spring in Minnedosa, Man.

dry. As one moves eastward across the province precipitation increases on the west side of mountain ranges and decreases on the east side. Because it is frequently possible for cold Arctic air to traverse the mountains from the north and east, temperatures are much colder in the interior in winter than they are on the coast and, because the sheltering effect of the mountains excludes the moderating influence of the ocean, temperatures are high in summer, with the daily maximum averaging  $80^{\circ}\text{F}$  or more at many stations. In winter, daily minimum temperatures range from  $20^{\circ}\text{F}$  in the south to well below zero in the northern part of the province.

### The Prairie Provinces

There are no mountain barriers to protect the Prairie Provinces from cold air moving south from the Arctic, or from warm air moving north from the central plains of the United States. Consequently, this section of Canada shows the widest variation of annual temperature between summer and winter and, in addition, the day-to-day variability can be greater than in any other part of the country. In winter, temperatures are frequently below zero, the absolute humidity is low and winter precipitation is generally fairly light.

Blizzards are a feature of winters on the Prairies. They are characterized by intense cold, strong winds, and snow, with visibility reduced sometimes almost to zero by drifting and blowing snow. In a blizzard the amount of snow falling may be less than one inch but, driven by strong winds, it has a greater effect in dislocating human activities than most other meteorological phenomena. Another feature



of the climate of that part of Alberta nearest the foothills is the winter chinook, when warm, dry winds blowing down from the mountains produce a dramatic rise in temperature—a typical rise being from  $-20^{\circ}\text{F}$  to  $+35^{\circ}\text{F}$ . With a chinook the winds are usually strong and gusty, from 25 to 50 miles an hour, with gusts which may reach or exceed 100 miles an hour. Because the air is dry the snow cover is removed very rapidly and sometimes there is soil drifting. The chinook affects an area extending about 100 miles eastward from the foothills of the mountains, but its intensity falls off rapidly farther to the east.

In summer the prairie air is much more moist than in winter, and although the weather systems crossing the area are relatively weak, they frequently set off thunderstorms characterized by heavy rainfall and hail. Southeastern Alberta and southwestern Saskatchewan experience the driest conditions on the Prairies, and precipitation generally increases from west to east as the rest of Saskatchewan and Manitoba come more and more within the influence of flows of warm, moist air from the central United States. On the other hand, precipitation is relatively heavy in parts of the foothills and in the northern part of Alberta as air is lifted up the foothill slopes in westward-moving circulations.

Summer in the Yukon. Fireweed blooming beside the Dempster Highway.



## Ontario

Most of southern Ontario and that portion of northern Ontario to the east of Lake Superior have climates that are significantly modified by the presence of the Great Lakes. In addition, the usual general circulation over northern Ontario is more from a northerly direction than that over the Prairie Provinces, giving northern Ontario later springs than the Prairies. In the winter, Arctic air is prevalent in this area, making the winters cold and dry. In the summer a succession of cyclonic storms bring abundant precipitation to the region, although summers are hot for the latitude: many stations have reached  $100^{\circ}\text{F}$  on at least one occasion.

Southern Ontario is protected from the prevailing westerly winds by the Great Lakes so that the summers are cooler and winters milder than those in eastern Ontario or in the United States west of the Great Lakes. In July, for example, mean temperatures range from  $64^{\circ}\text{F}$  to  $70^{\circ}\text{F}$  in Ontario, while in Minnesota at the same latitude the corresponding value is about  $72^{\circ}\text{F}$ . The corresponding mean temperatures in January are  $18^{\circ}\text{F}$  to  $24^{\circ}\text{F}$  in Ontario, and  $11^{\circ}\text{F}$  in Minnesota. The effect of the lakes is most marked at places along the shore, particularly in summer when

Autumn in Ontario.







Winter in northern Ontario.

sunny days bring cool lake breezes which tend to lower the maximum temperatures. Summer in southern Ontario, however, is occasionally marked by the invasion of warm, humid air from south of the lakes. Precipitation is evenly distributed throughout the year as the contribution from the more intense and frequent storms of winter is matched by precipitation from the less well-developed storms and thunderstorms in the warmer, moister air of summer. Annual precipitation ranges from 30 to 40 inches.

## Quebec

Quebec exhibits a wide range of climates because of its vast expanse. In the northern and central parts of the province winters are cold and summers, although relatively short, are warm. In the southern part of this area, particularly along the north shore of the Gulf of St. Lawrence, snowfall is relatively heavy, the annual average exceeding 100 inches. In the lowlands of the St. Lawrence River valley the climate is much like that of southern Ontario, although the temperature reaches



greater extremes because the Great Lakes have little, if any, moderating effect on this part of the country. This makes the climate more continental in character, with about the same summer temperatures as Ontario, but somewhat colder winters.

Snowfall is heavier and more persistent because of the colder winter temperatures, which in January average 15°F in Montreal, 10°F in Ottawa, and 24°F in Toronto.

## **The Atlantic Provinces**

The climates of the Atlantic coast of Canada are more continental than those of the Pacific coast because of the circulations from the west which frequently bring flows of continental air over the region. A common storm track is parallel to the Atlantic coast, and these storms, when well developed, may bring strong winds and heavy precipitation to the coastal areas. In winter precipitation frequently takes the form of rain along the Nova Scotia coast, and of snowfall in New Brunswick, with freezing precipitation sometimes occurring in the intermediate zones. Summers are generally cool, although temperatures in the 90's are not unknown, particularly in New Brunswick, the most continental of the Maritime Provinces.

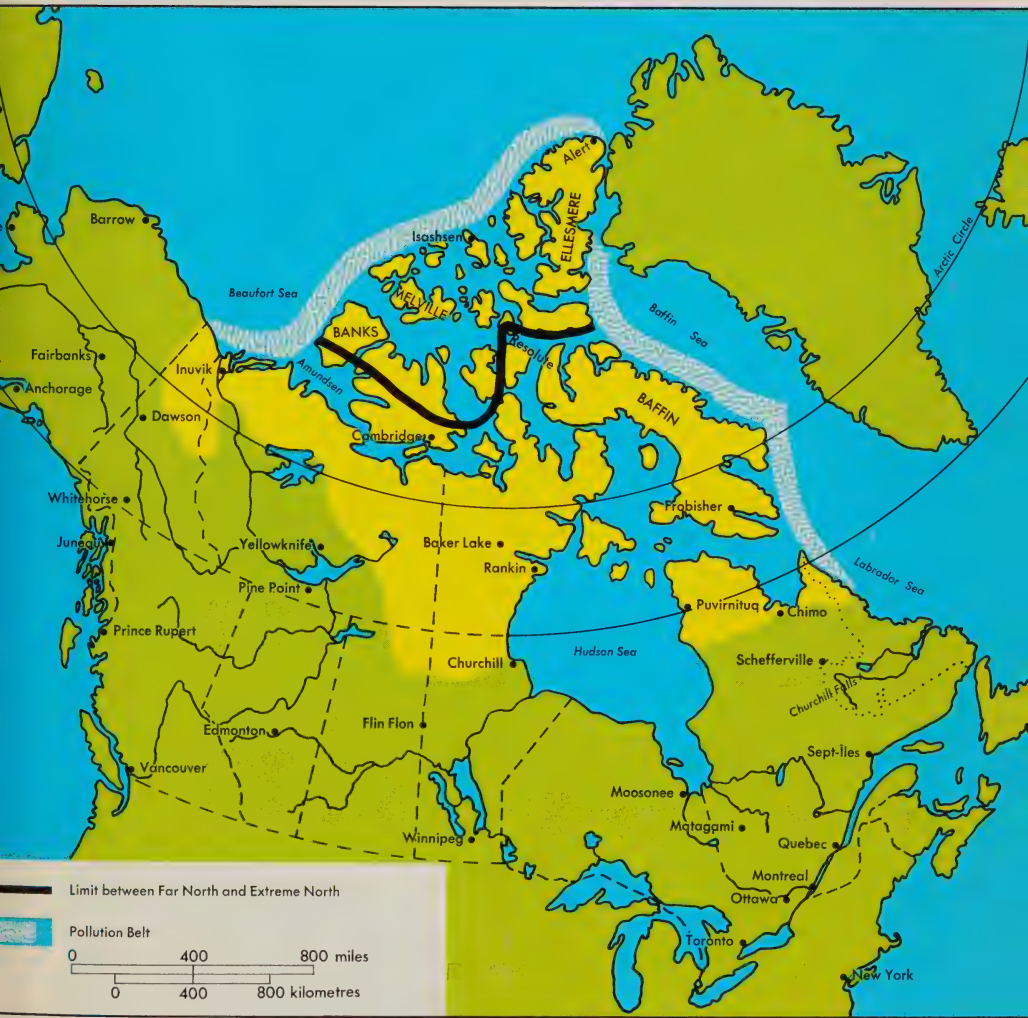
The Island of Newfoundland and the Labrador coast are occasionally invaded by moist maritime air bringing heavy snowfall or rainfall. In climate, Newfoundland is the most maritime of the Atlantic Provinces, and this is most evident in spring and summer, which are quite cool by Canadian standards. Storms moving up the Atlantic coast of the mainland frequently pass over eastern Newfoundland, bringing strong northeasterly winds, rain, or snow. Labrador experiences the same general type of east-coast weather as the rest of the region but, being considerably farther north, temperatures are lower and the greater proportion of the precipitation falls as snow. Arctic air masses moving southeastward over Labrador are unmodified and consequently winter temperatures are very cold.

## **The Yukon and Northwest Territories**

The basic temperature control in Canada's north is its high latitude, since a great deal of the area lies above the Arctic Circle. As a result, much of the region experiences the polar night. Even in summer when the days are long, the low angle of the sun at noon prevents the solar radiation from providing the same heating as it does farther south. During the winter, the surface is snow- or ice-covered and this, combined with the deficiency of solar radiation, leads to very low temperatures. As a result, massive high pressure areas are formed which prevent the influx of warmer air from the south. Temperatures during the long winter remain below zero in much of the north, and mean temperatures are as low as -35°F in February in the northern part of the Arctic archipelago. While the average temperatures are lowest on the northern islands, the extreme values are usually reported from the Yukon Territory, where the lowest temperature reported anywhere in North America, -81°F, occurred at Snag.

# The Canadian Arctic

This area is made up of the "North" and the "Far North," according to the definitions given in *Canada 1970* (Ottawa 1969). These simple but significant terms designate the most rugged parts of the country. It is therefore not at all surprising that the total civilian population amounts to scarcely 20,000.





A small iceberg in Frobisher Bay.

The spring hunt by dogteam over the flooded ice of Bathurst Inlet.





## Location

This vast area of the Canadian North is bounded by the Labrador Sea and Baffin Bay, the Arctic Ocean, Alaska, the Great Lakes of the Mackenzie basin and the northern parts of four provinces. Within these boundaries are found not only the largest islands in Canada (Baffin, Ellesmere) but also the greatest expanse of water in any country. This territory, which makes up nearly 40 per cent of the total area of Canada, has only slightly more land than water. The channels of the Arctic archipelago and the Hudson Bay region are creating sovereignty or jurisdictional problems not only with respect to navigation but also fishing, hunting and underwater mining operations. The penetration of the sea is one of the outstanding characteristics of the Canadian Arctic.

By definition the southern limit of the Arctic corresponds to the 500 polar unit isogram. This line does not follow the political boundary of the Northwest Territories, but diverges from it, particularly in the Mackenzie valley which, because of its summer climate, would be better classified as subarctic. It is therefore in central and eastern Canada that polar conditions extend furthest south.

The distance between the main Canadian population belt and the Arctic is one of the greatest disadvantages of this region. Alert is located more than 2,500 miles (4,000 km.) from Toronto. Fortunately, air transportation has greatly reduced the time inconvenience. A jet, flying its regular schedule, covers the distance from Montreal to Resolute in six hours. However, expense remains a drawback. It costs approximately \$2,000 to ship by air a house prefabricated in the St. Lawrence Valley to Baffin. With the exception of centres which can be supplied by ship, the cost of transporting a gallon of fuel oil to the Arctic can be twice that of the fuel itself.

Vastness, remoteness from the populated regions of Canada, substantial quantities of water and the broken-up land masses—these are the main physical characteristics of the Canadian Arctic.

## Climatic Features

In its different forms ice reflects the Arctic climate. Ice masses are permanent, or melt; are visible, or not visible. In Canada, ice on land—that is glaciers—is far less widespread than in neighbouring Greenland and is found only in mountainous areas, especially in the highest part of Ellesmere and Baffin Islands. It does not constitute a great hindrance. The other two kinds of ice are found in opposite locations—at the same time that ice is in the ground, the channels are blocked with floating ice.

There are different types of ice inside the ground, from pingos (hills with ice cores) to the ice cement which binds mineral particles together (permafrost). In Melville Island the ground is frozen to a depth of almost 1,600 feet. (In Central Siberia the permafrost is three times as deep.) During the summer the upper zone of the permafrost thaws from a few inches to a few feet deep. As a result of this seasonal change, the foundations of houses and roads become less solid. Special building techniques have had to be developed, such as those used for the radar bases and in Inuvik. Permafrost also prevents the inhabitants from placing their



The school and hostels in Pond Inlet, on northern Baffin Island.

water pipes underground. They have therefore invented the "utilidor system," which consists of boxes mounted on piling. Inside the boxes are pipes carrying clean and used water. The boxes are well insulated and are heated when necessary. The alternate freezing and thawing at ground level creates curious surface formations such as perfect circles of stones and innumerable pools. These figurations show how extremely sensitive to seasonal change is the shallow layer of ground which is naturally in harmony with its equally delicate covering of vegetation. Any disturbance of this fragile surface will set in motion uncontrollable melting or freezing mechanisms. On account of this danger, it seemed desirable to limit vehicle movement to winter when the frozen ground is protected by a bit of snow.

A considerable volume of floating ice is found between the land masses. Outside the strips along the coast where the surface water freezes on the spot, ice-packs are formed by the inward movement of separate pieces of ice. These independent blocks and floes may be welded together by new ice. This creates an attractive mosaic of colours and shapes. Impressive ice thrusts accumulate on the low lying coasts. The thaw comes late, yet it will extend everywhere except for some Far North channels exposed to the polar cap. Thus it was north of Banks Island that the *Manhattan* was blocked in 1969. To facilitate navigation two types of ice indexes have been developed. One informs the ship's Master of the quantity of ice and the other indicates floe dimensions. In the Canadian Arctic the three main waterways at the end of summer are Hudson Strait toward Churchill, and the passages from Baffin to Resolute and Amundsen Gulf to the northwest estuary of the Mackenzie.

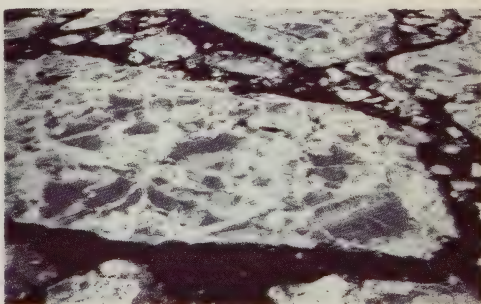
The Arctic is notable for the coldness of its air. The lowest recorded temperature is 81° F below zero (−62.8°C) taken at Snag in the Yukon. But cold is relative. A world low may be the −126.9° F (−88.3°C) recorded by the Russians at Vostok in the Antarctic. As far as man is concerned, his mental outlook, the wind, air humidity, the production of body heat, and the protection afforded by clothing and heating are factors modifying the actual experience of cold. Cold is not felt by individuals in the same way. A southerner temporarily in the North suffers more from the cold than does a permanent inhabitant, whether Amerindian or white.

The impact of the cold is felt everywhere. Masses of cold dry anticyclonic air resist the penetration of more humid cells. Thus the cold makes the Arctic a desert where lichen is slow to grow. The rate of heat loss from a house in the Arctic is three times that of Montreal. Hence, the necessity of adopting the best insulating techniques for housing. Because of the cold, running water is a source of many problems. It is difficult to obtain and store, and fire is a serious danger. Engineers engaged in developing sites and roads must know how to get rid of the water which could collect in later seasons as a result of the freezing — melting — freezing cycle. When in contact with any source of humidity the cold can coat windows, ship's riggings, mine pitheads, airplane wings and face coverings with ice. Mechanical appliances have not been produced for the Arctic climate and those available do not always withstand the contraction due to freezing. Breakage is frequent. Cold also hinders the lubrication of parts.

As elsewhere in Canada, seasonal climatic changes are pronounced. The sunless period (north of the Arctic Circle), the half-seasons and the storms make up the most difficult times of the year.

### Territorial Organization

In spite of its recent establishment in the area, political authority is in the process of being restructured. In the first place, the land was made Canadian during the last century — around 1870 for the Hudson Bay region and 1880 for the



Polar bears, ice formations (right),  
and musk-oxen.



greater part of the archipelago. Islands were discovered by W. Stefansson in 1916, others were bought from Norway around 1930. At the end of the Second World War, aerial photography made it possible to draw a detailed outline of the coasts. The period of discovery is now over.

There are several political structures in the Arctic. For example, the part north of the 60th parallel of latitude (not including the Yukon and the Quebec-Labrador peninsula) is the domain of the federal government and the Northwest Territories government. In 1967 an important transfer of administrative and legislative responsibility was made to the territorial government. The Legislative Council of the Northwest Territories now consists of 14 members, 10 of whom are elected. Altogether, a federal department (aided by other departments), a Member of Parliament, the government of the Northwest Territories and certain local administrations are jointly responsible for the political functioning of this part of the Canadian North.

This administrative structure does not mean that the region functions politically in the same way as a developed country. On the contrary, the territory is still only slightly organized. The inhabitants are few and scattered in almost 50 centres; 60 per cent of the settlements have less than 300 people. The most populated centres, Inuvik in the west and Frobisher Bay in the east, do not have more than 3,000

A fine example of Eskimo sculpture by a Povungnituk, Que., artist.



people. (Neither Yellowknife nor Whitehorse is located in the Arctic proper.) Huge, repulsive or unattractive moles separate the settlements: 400 miles (640 km) between Baker Lake and Snowdrift on Great Slave Lake. In these conditions, the political presence can hardly be attributed to population or work-operations. Rather it is tied in with liaison functions: air routes, social services and telecommunications (conventional, radar or satellite). To a large extent the Canadian character of the North depends on these media.

### Economic Life

There has been economic activity in the North. In the past Eskimos were self-sufficient, living on sea, land, air and river faunae. At the beginning of the century the Canadian government issued whale-hunting permits. Today the Hudson Bay Company maintains a few dozen trading posts. Reindeer are raised for commercial purposes in the Mackenzie delta. Nickel has been extracted from Keewatin, and the setting-up of nickel mining operations on the Quebec side of Hudson Strait is being contemplated. Public and private capital have facilitated the discovery of oil, and discussions are under way on the construction of a pipeline along the Mackenzie River which would transport the fuel from Alaska to the principal market in the United States. Sculpture, handicraft, engraving and fishing co-operatives have sprung up in several places such as Cape Dorset and Povungnituk (Puvirnituk). Rankin has set up a cannery. The midnight sun, Eskimos, contact with nature, and polar bear hunting are tourist attractions. Certain parts of this area are well provided with facilities. For a few weeks each summer the ports of Tuktoyaktuk and Resolute are very busy.

All levels of economic development are found in the Arctic. Under-development exists where the natural resources are only partially exploited. On the other hand, whenever hunting for pleasure threatens the wildlife reserves, it is a case of over-development. Paradoxically enough, in this almost empty country examples of poor development are found, one of which is the pointless degrading of the environment and native cultures. Fortunately, a harmonious or optimal development has been realized in some places. But, generally speaking, the Arctic remains undeveloped since its resources are not yet known. Moreover, the economic and social problems of regional planning have only on rare occasions been given appropriate solutions. In the Far North in particular, the economy remains inactive. Thus the Arctic accounts for very little in the national production; its economic balance shows a large deficit. A sizable amount of revenue must come from the salaries and allowances paid by the governments. Given these conditions, the region is in a poor position to fight unemployment, which is very high.

The Arctic is a world apart. There could be no more serious mistake than to apply here, without any adaptation, the ideas generally accepted or put into practice in the populated areas of Canada. For the inhabitants of southern Canada, adaptation to the North is still an almost totally new objective.

# the people and their heritage





## History

Canada is an independent nation in North America composed of two predominant linguistic and cultural groups: French and English. To these two major groups, and to the small native population of Indians and Eskimos, have been added over the last hundred years many thousands of immigrants representing the major European cultures. For the most part these immigrant groups have associated themselves with the English-speaking community, though maintaining many aspects of their mother cultures. The country has thus never been a homogeneous melting pot, but has rather had the aspect of a cultural mosaic in which the major pattern is traced in the colours of the French and English cultures.

Much of the country's history can be viewed as a continuing search for accommodation and co-operation between the two major cultural communities, and the integration of newcomers into the basic pattern. At the same time, as this internal accommodation has been working itself out, the country has passed through a dual process of self-definition in relation to the outside world. The first of these processes has been the evolution of the country from the status of a colony within the British Empire to the stature of independent nationhood within the Com-

monwealth. The second more subtle and often more difficult process has been in defining and defending its independence in relation to the power and prestige of its enormous neighbour, the United States. These two themes of internal bicultural accommodation and external self-definition underlie and affect nearly every other development in the Canadian past: patterns of settlement, institutional growth, economic development, foreign policy, cultural evolution.

The exploration and settlement of North America by Europeans began seriously at the beginning of the seventeenth century. There had, of course, been earlier voyages dating back as far as the Norsemen, but concentrated efforts had to await the emergence of the powerful nation states of Europe. From the earliest beginnings the French and English established competitive settlements and trading centres. The English moved in from the north through Hudson Bay in the 1670's but the French had already penetrated the continent through the vast St. Lawrence River more than half a century earlier. To the south were the Dutch on the Hudson, soon to be pushed out by the British, and the Puritan settlements in New England. As these colonies grew, so did competition for the hinterlands. The French pressed north and westward to challenge the English on Hudson Bay. And traders

The Habitation at Port Royal, N.S., was built in 1605 by Champlain and Du Gua de Monts.



from the two communities, with the aid of their Indian allies, struggled for control of the rich Ohio valley. It was this competition, and the rivalry of France and Britain in Europe, which ultimately brought war and the downfall of the French Empire in North America. But before that event took place New France had sunk deep roots along the banks of the St. Lawrence and in Acadia.

The first half-century of New France's existence, down to 1663, had been characterized by near-failure on all fronts: settlement, missionary activity, and trade. Yet it was this struggling period that provided later generations with a sense of an heroic past when the tiny colony struggled for survival against the elements, the Iroquois, and the English. From these years came the heroes and martyrs, both religious and secular: Brébeuf and his brethren who died in their effort to bring Christianity to the Indians; Dollard and his young companions who died defending the colony and its trade at the Long Sault in 1660.

Yet by 1663 the colonists numbered fewer than 2,500 and the future was bleak. It was only saved by the decision of Louis XIV to assume direct control of his North American possessions. The establishment of royal government was accompanied by an infusion of new settlers, trained civil servants with plans for eco-

The old manoir-presbytery at Batiscan, Que., is considered one of the best examples in Canada of a 17th century building.





conomic development, and troops to defend the colony. Though the colony's economy became somewhat more diversified it remained dependent upon France on the one hand and the fur trade on the other. By the 1740's French-English rivalry in Europe, North America, and elsewhere in the world brought the beginnings of the war that was to spell the end of New France. The final phase of that war began in 1754 and was concluded by the Treaty of Paris in 1763 when France's major North American possessions were ceded to the British.

The British Conquest of Canada, a major event in the country's history, temporarily united North America under the British flag. Within two decades that unity was permanently destroyed by the success of the American War of Independence. Yet in the intervening period the French-speaking inhabitants of Canada, numbering about 70,000 at the time of the Conquest, had continued to exhibit their capacity to survive. Faced with growing unrest in the thirteen colonies, the British authorities in Canada gave up an early attempt to assimilate their new subjects and granted recognition, in the Quebec Act of 1774, to the major institutions of the French-speaking community: its civil laws, its seigneurial system, its Roman Catholic religious organization. The efforts of the revolting colonies to add Canada and Nova Scotia to their cause failed. But during and after the war thousands of Loyalists fled northward, settling in Nova Scotia, what was later to become New Brunswick, and to Canada both in the Eastern Townships and the western region of the colony north of Lake Ontario. It was in this fashion that the first substantial group of English-speaking settlers established themselves in the predominantly French-speaking British colony. Here was the beginning of the pattern of Canada's future development.

The coming of the Loyalists required new constitutional arrangements. The Constitutional Act of 1791 divided the old Province of Quebec into two colonies, Upper and Lower Canada, and granted each its first representative assembly, an institution which had existed in Nova Scotia since 1758. It was within the context of this constitution that the colony began to grow economically and demographically. It was also within this context that a struggle took place for internal self-government or responsible government. That was achieved in 1849 but only after abortive rebellions in the two Canadas in 1837 and the reunification of the two colonies in 1841.

By the middle of the nineteenth century the British colonies in North America — Canada, Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland — were ready to move haltingly toward a new stage in their constitutional development. Each colony separately faced an increasing burden of public expenditure in the age of canal and railway building. Each, too, was faced with limited markets, since the coming of free trade in Britain had ended their preferential treatment within the Empire. In the Canadas there was the additional problem of growing political deadlock and threatening cultural conflict in a union based upon equality of representation for each of the two sections. And, finally, in the 1860's, there was the threat of an increasingly hostile United States just emerging from its bloody civil war. These events, plus the encouragement of Britain anxious to reduce its commitments in North America, resulted in a decision in 1865 to move toward a federation of all British North America.

That federation was partially achieved on July 1, 1867, when the Canadas, Nova



Winnipeg, Man., in 1870 had 215 inhabitants and 18 businesses.

Scotia, and New Brunswick joined together in Confederation under the British North America Act. This constitution was the work of an energetic group of British North American politicians including John A. Macdonald, George Brown, George-Étienne Cartier, Alexander Galt of Canada, Charles Tupper of Nova Scotia and Leonard Tilley of New Brunswick. Their combined political skills and legal talents were severely tested in the foundation of "the new nationality." The constitution was a highly centralized federal scheme which made the central government clearly dominant, but left to the provinces those matters which they considered to be of purely local concern. The French and English languages were established as official in the federal parliament, its records, and its courts, and the Province of Quebec was also recognized as an officially bilingual province. The new nation was a parliamentary monarchy operating according to the well-understood principles of cabinet government. The Parliament of Canada at Ottawa was composed of the Crown's representative, the Governor-General, and a bicameral legislature, the House of Commons and the Senate.

At the outset the plan was incomplete for it was intended that the territory of the new nation should stretch from coast to coast. The first step was the acquisition of the lands owned by the Hudson Bay Company in the west. This was quickly achieved but the first new province, Manitoba, was only established after a rebellion in Red River led by a young *Métis*, Louis Riel, was defeated. The province was established in 1870. A year later the Pacific coast province of British Columbia entered the union on the promise that a transcontinental railway would be built. Two years later Prince Edward Island was added. In 1874 the extensive lands between Manitoba and British Columbia were organized as the Northwest Territories. This area, in 1885, was the scene of a second uprising of *Métis* and



Indians again led by Louis Riel. The completion of the Canadian Pacific Railway in that same year made it possible for the Canadian authorities to defeat the rebels, and this time Riel was captured, tried, and hanged for treason. Twenty years later, in 1905, the provinces of Saskatchewan and Alberta were added to the union. The last of the ten provinces to join Canada was Newfoundland in 1949.

Once the basic structure was established, the federal Conservative Government, led by Sir John A. Macdonald, proceeded to develop policies to fill out the skeleton. The railway, binding together the various far-flung sections was the first developmental policy. But along with it were immigration programs to populate the open spaces with agricultural settlers and a policy of tariff protection, announced in 1879, to develop a Canadian industrial system. It was the Macdonald Government's determination to build a national economy on an east-west axis independent of the United States.

Though the Liberal Opposition had been critical of many of these policies, when they came to power under Wilfrid Laurier in 1896 they continued them with few modifications. The major difference was that under Laurier the policies experienced greater success because prosperous world economic conditions provided investment funds for Canadian development, markets for the country's growing grain and mineral production, and thousands of new immigrants from Great Britain, the United States, and Europe. By the outbreak of World War I Canada was well on its way to fulfilling the destiny which the Fathers of Confederation had predicted.

The settlement of western Canada in the 19th and early 20th centuries was relatively peaceful owing in large measure to the presence of the Royal Canadian Mounted Police.





The Laurier years, for all of their prosperity, witnessed the beginnings of serious cultural, sectional, and class conflicts. Relations between English- and French-speaking Canadians had been worsened by the hanging of Louis Riel, with whom the French Canadian identified. Then came attacks upon the French language and Catholic separate schools in Manitoba and the Northwest in the 1890's. Laurier successfully smoothed over this latter crisis, but cultural relations were also strained by Canadian involvement in the Boer War and the long pre-war debate over the country's place in Imperial affairs. French Canadians, on the whole, were reluctant to be involved in Imperial affairs, while many English Canadians identified Canadian interests with those of the Empire—especially since the Empire provided a protective umbrella against the United States. This development reached its culmination in 1917 when the country, which had entered the war united, was split culturally over the issue of conscription for overseas service.

Sectional discontents were present especially in the Prairie west. This region, almost exclusively agricultural, felt that the national economic policies were designed primarily for the industrial areas of central Canada. The defeat of a proposed reciprocity arrangement with the United States in the election of 1911 left the West in a mood of discontent which manifested itself only after the war in the form of the farmers' Progressive Party. Class tensions were apparent in the growth of labour organization under the leadership of the Trades and Labour Council of Canada. The end of the war also saw labour conflict flare in a general strike in Winnipeg in the spring of 1919.

Canada emerged from the war, in which she had played a substantial part, with a new sense of national pride. That pride was transformed, in the postwar years, into a quest for a status of equality within the new British Commonwealth. Sir Robert Borden, the wartime Prime Minister, set this development in motion and it was continued by the Liberal and Conservative Governments under W. L. M. King and R. B. Bennett. The Statute of Westminster in 1931 provided the legal definition of Canadian autonomy.

The Great Depression brought serious dislocation of the Canadian economy, heavy unemployment, and new movements of social protest. In Quebec this discontent expressed itself in a new party called the *Union nationale* while elsewhere in Canada, especially in the West, the Social Credit and Co-Operative Commonwealth Federation parties made a marked impact. The federal government's major problem in these years was its weakened constitutional position, the provinces having been given or having won control over such matters as social welfare and natural resource development. A federal Royal Commission in 1940 recommended that the constitutional arrangements should be revised to give the federal government authority over major economic, social, and tax policies. The recommendations were never implemented but the exigencies of the war once more placed the federal government in a predominant position.

The war and postwar years were a period of great prosperity and economic growth for Canadians. Again Canada played an important part in the war and its unity was only briefly threatened, again over the conscription issue. W. L. M. King's retirement in 1949 and his replacement by Louis St. Laurent marked an easy transition to postwar prosperity. Much of this new growth was financed by American direct investment so that prosperity was bought at the price of increas-



Fort Langley, in the Fraser Valley of British Columbia, was established by the Hudson's Bay Company in 1827. Here, in 1858, James Douglas was sworn in as governor of the colony of British Columbia.

ing American control of the Canadian economy. Since this came at a time when Canada was moving into closer European (NATO) and North American (NORAD) military alliances with the United States, some Canadians began to worry about the country's future. It was this concern, added to a growing dissatisfaction in several of the provinces over Ottawa's centralist policies, that brought the Conservative John Diefenbaker to power in 1957.

The Diefenbaker years were marked by a growing debate over Canada-U.S. relations and, more particularly, the revival of nationalism in Quebec under the guise of "a quiet revolution." This latter event included a whole series of measures meant to modernize Quebec society now transformed by accelerated industrialism. With increasing frequency and intensity many prominent French Canadians expressed dissatisfaction with their status within Confederation and began asking that Quebec be given more autonomy as a province and that French be given greater recognition throughout Canada. In 1963 Lester Pearson's minority Liberal Government established a Royal Commission on Bilingualism and Biculturalism to examine this question. Four years later, after the centennial celebrations, Mr. Pearson proposed a series of federal-provincial discussions to examine and reform the constitution in general. This task is being continued under the direction of his successor, Pierre Elliott Trudeau, whose Liberal party was given a majority in the general election of 1968.

Thus, after more than three and a half centuries of existence, Canada, with her 21,000,000 people, has evolved and prospered. Her place as a so-called middle power in the world is well established.

# The Native Peoples

## Indians

Before the end of the last glacial period, successive migrations of nomads crossed from the steppes of Siberia to Alaska, via the isthmus which then existed. Over succeeding centuries, the migrant bands wandered, established territorial rights, expanded, and diversified their life-styles according to their environment. Eventually, the territorial claims of bands and tribes became relatively stable.

Geography, not language, was the foundation of the cultures. The six more-or-less distinct cultural groups were the nomads of the eastern woodlands, the agriculturalists of the eastern woodlands, the plains culture tribes, the nomads of the northwest, the mountain and plateau dwellers, and the tribes of the West Coast.

The Algonkian linguistic groups of the eastern woodlands were nomadic because of their dependency on game, fish, and wild fruits. Their mobility necessitated the development of highly advanced modes of transportation, hence canoes, snowshoes, toboggans, and portable dwellings (wigwams) were an integral part of their material culture. These and other material things were made from birch bark, animal hides and other natural resources which abounded in their environment. The more hostile environment encountered by the northern nomads did not allow them the larger bands and more cohesive social structure of their southern counterparts, the Iroquoian.

The agriculturalists of the eastern woodlands were of the Iroquoian linguistic group. Their agrarian way of life allowed them to form permanent settlements and develop a more complex social order. This included the development of religious societies and a more advanced political structure. The permanence of their homes stimulated the development of pottery and decorative art. Their longhouses of bark, as well as providing housing for extended, non-nuclear families, were the centre of all social and religious functions.

The Algonkian, Athabaskan, and Sioux linguistic groups made up the Plains culture tribes. These tribes roamed the vast expanses of the Canadian Prairies following the buffalo herds. The buffalo provided food, clothing, and shelter for these highly mobile tribes, thus their culture—material, religious, and social—was built around the hunt. The feather head-dress and magnificent regalia used in their celebrations, both religious and social, made them one of the most colourful cultural groups on the continent.

The Athabaskan linguistic group peopled the Mackenzie River system and woodlands north of the Churchill River. These nomads of the northwest based their economy on caribou, moose, hare, fish, and berries. Like the Algonkians, they used canoes and snowshoes extensively for travel. The migratory patterns of the caribou and moose demanded the use of easily movable tents in summer, and in winter the Athabaskans were housed in more permanent dwellings of bark and logs. Because of the mobility and scattered location of these wandering groups, there existed no need for inter-tribal political connections.

The mountain and plateau dwellers consisted of four linguistic groups: Athabaskan, Salishan, Kootenayan, and Tlingit. The interior plateau of British Columbia and the Yukon provided for a fishing, hunting and gathering economy.



Wicker cage traps and dip nets were used to catch migratory salmon, and spruce root baskets were used to gather roots and berries. Dwellings included skin and rush tents, semi-subterranean houses, and rectangular log and bark huts. Little formality existed in social, political, and economic relationships, but there was a tendency to adopt the social organization of the Pacific Coast culture.

The tribes of the West Coast were numerous: Tsimshian, Haida, Salishan, Kwakiutl, Bella Coola, and Nootka. Their environment provided them abundantly with food and raw materials. With the basic necessities so readily available, the West Coast tribes had leisure time to develop their high totemic art, basketry, weaving, and painting. West Coast art is one of unsurpassed beauty. The material culture of the West Coast Indians centred around the gigantic cedar tree, which grew to majestic heights in the rain forests of the West Coast. Cedar fibres were used for clothing, mats, and room partitions, and the roots were used in the art of basketry. The mighty cedar was also used in massive buildings, in elaborately carved dug-out canoes, totem poles, and everyday utensils. The tribes of the West Coast are unique in Canada in that they had a stratified society, consisting of nobles, commoners, and slaves. The potlatch ceremonies were not only an indication of noble status, but also ensured that the welfare of the noble's family would be seen to in the event of death or disability. One of the major features of the potlatch was that it was conducive to inter-tribal trading and exchange of knowledge.



A chief of the Stony tribe at the Calgary Stampede. His costume has elements derived from that of the Blackfoot.

A totem pole has been raised on Cormorant Island, B.C. in memory of the renowned Kwakiutl Indian carver and story teller, Mungo Martin.



Religion among all tribes included a reverence for nature which supplied them so abundantly with food and other life-necessities. At adolescence, each youth fasted alone in the wilderness and received his dream vision of the spirit which would be his guardian through life: bird, beast, fish, thunder, the being in the rock or waterfall; one of a host of semi-deities, or a manifestation of the power of the major deities—Manitou, Thunderbird, Sun or some man-beast-bird of great magical prowess. Most bands had a medicine man who ministered to both spiritual and temporal needs. In him lived centuries of medical knowledge, which included neurological surgery and the treatment of psychosomatic ailments.

All these cultures were undermined by European settlers who neither understood the first citizens, nor found the time to. The Europeans' main interests were to acquire land, wealth and freedom. The new weapons and technology, new economic values, alcohol, and European diseases that they brought with them—which raged unchecked across the continent—wrecked the tribal system. By the 1880's, with the buffalo gone from the Prairies, and with the population reduced by half, the Indians had reached their nadir.

At the present time, most Indians are organized into 556 bands, and live on 2,263 reservations, covering six million acres of this vast country. The Indian Affairs Branch of the Department of Indian Affairs and Northern Development is responsible for effective education, economic development, community development, resource management, social welfare, and engineering, in partnership with elected Indian leaders across the country.

Granaries on the Blood Indian Reservation to the west of Lethbridge, Alta.





## Eskimos

For Canada's 16,000 Eskimos this is a period of transition from the land and sea oriented hunting-fishing-trapping life of their ancestors, to a settlement-centred wage-earning economy. The popular image of the fur-clad, blubber-eating, igloo-dwelling Eskimo is very definitely *passé*. It is true that many Eskimos still live primarily by hunting, fishing and trapping, but theirs is, essentially, a vanishing mode of life.

There is a certain sadness in this, because over untold generations the Eskimos had evolved a culture nearly perfectly attuned to the hard exigencies of the Arctic. It was this highly specialized culture which enabled the Eskimos to live and prosper in one of the harshest, most hostile regions on earth inhabited by man.

The Eskimos' forebears, probably of Mongoloid stock, crossed from Asia to North America after the last Ice Age, about 6,000 to 8,000 years ago. Anthropologists call the first discernible proto-Eskimo culture the Cape Denbigh Complex of the Arctic Small Tool Tradition. From Alaska, the Denbigh people spread slowly eastward along the Arctic coasts, reaching northeastern Greenland by about 2,000 B.C.

One intriguing question is: why did they move east into the climatically forbidding Arctic, instead of travelling south? The probable answer is that the more clement southern regions had already been pre-empted by Indian tribes whose ancestors had arrived in North America long before the proto-Eskimos made their

Most Eskimos live in modern houses, but on hunting trips they still build igloos. This photograph was taken on Ellesmere Island.





A hunter stands on the edge of the floe on Jens Munk Island, off Baffin Island, scanning the water for seal.

appearance. But it is also possible that the Eskimos' forebears were lured to the Arctic by its immense wealth of wildlife. The north now holds only remnants of this wealth: with the possible exception of a couple of seal species, there remain only about 10 per cent of the former numbers of the large sea and land mammals upon which Eskimo life depended.

From the people of the Arctic Small Tool Tradition, a new culture emerged about 800 B.C., probably in the Foxe Basin area of northern Hudson Bay. Since its first recognized artifacts came from the Cape Dorset area of southern Baffin Island, it has been called the Dorset Culture. It spread west nearly as far as the Mackenzie Delta, east to Greenland, and south along the coast of Labrador and across the Strait of Belle Isle to northern Newfoundland.

For nearly 2,000 years, people of the Dorset Culture held sway over most of the Arctic. They were distinctly Eskimoan. They used skin boats, heated their homes with crescent-shaped seal oil lamps, and they may have invented the igloo. The Eskimos remember the Dorsets to this day. They live on in their legends and folklore as a race of giants, the Tunit, superhumanly strong.

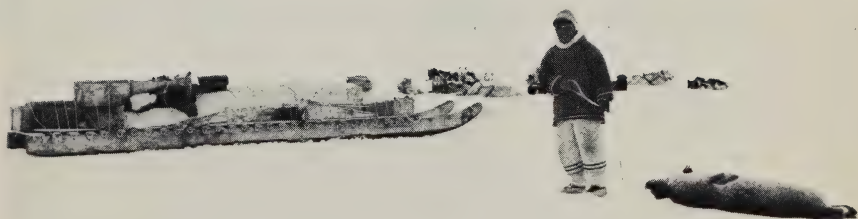
The Dorsets were exterminated or absorbed by Thule Culture Eskimos. Invading the Arctic from Alaska about 900 A.D., they advanced, within 300 years, all the way to Greenland and Labrador. Though perhaps not as powerful as the Dorsets, Thule Culture people were skilful and courageous hunters. They pursued caribou and

musk-oxen, and all sea mammals, including the giant Greenland whales.

Hunting these huge animals, which weigh up to 60 tons, from open skin boats with bone harpoons and bone or slate lances was a risky enterprise. But if successful it was eminently rewarding. Swathed in a blubber blanket nearly two feet thick, one whale provided an amount of food equivalent to a thousand seals, and some very prolonged feasts for a people fond of fat. This bounty enabled Thule Culture Eskimos to cluster, in some regions, in permanent villages with as many as 30 houses.

In the early 18th century, whale hunting declined and with it the Thule people's distinctive way of life. They gradually dispersed, became more migratory, and the modern phase of Eskimo life began, with its tiny pockets of people scattered over the immensity of the Arctic. No group of people on earth occupied an area as large as that inhabited by the Eskimos: from eastern Siberia to the east coast of Greenland, and from northern Greenland to the Gulf of St. Lawrence, distances of 6,000 and 2,000 miles respectively. But the average population density was only about one person per 250 square miles (as compared to the present average population density of over 818 people per square mile in Belgium).

A Grise Fiord Eskimo on a spring hunting trip returns to his sled with a seal.







Children of Grise Fiord play during recess outside their school.

Unlike the animals of the Arctic, Eskimos did not physiologically adapt (or if they did, it was only to a very minor extent) to the rigours of the northern climate. Their success in Arctic living was due to cultural adaptation. Even our advanced technology has not been able to develop a winter garment as light and warm, as the caribou fur clothes Eskimos wore in the past. A complete, double-layered fur suit, plus mitts and boots, weighed only ten pounds, yet would keep its wearer comfortably warm at  $-30^{\circ}\text{F}$ , with a wind.

Not only is the Arctic a harsh, cold region, it is devoid of many raw materials other societies have considered essential. All the Eskimos had was bone, stone, ivory, and, in some areas, baleen and driftwood. The tools and weapons they fashioned of such materials are masterpieces of skill, ingenuity, and patience. It took a month or more to make a cooking pot of soapstone, chipping it out with a stone adze, and rubbing it smooth with a harder stone. To obtain wood for kayak skeletons and dog sleds, some Eskimo groups made migrations that could last a year.

Eskimo society was essentially one of equals. They had no rulers or chiefs, their language even lacks the term. The closest they could come was to call a man "ishumata"—he who thinks—a hunter whom others respected for his knowledge and success. The land and its resources belonged to all, and food was shared

among members of a camp community. People were held together by ties of kinship and acquaintance, rather than in formal tribal groupings. The frequent word ending “-miut” (Sadlermiut, Iglulingmiut, Netsilingmiut) does not denote adherence to a tribe. It simply means “the people of” a certain place, similar to the “-er” in Montrealer or New Yorker.

The peoples’ lives were ruled by the seasons. In winter some groups lived in igloo villages far out on the sea ice, to hunt seals at their breathing holes. In summer, most coastal Eskimos hunted seals from kayaks, while the central Eskimos migrated extensively in search of caribou. Fall was the char fishing season, and the time for inland caribou hunts, to obtain meat and fat, and fur for winter clothing. It was a life of endless wandering and taking from each area what it could provide in its season. In many ways, it was a happy and harmonious life.

One of the reasons, of course, for the Eskimos’ contentment, was that their life was fairly simple and basic, and their expectations of life were equally simple and basic. Possessions were minimal and mostly utilitarian. For a migratory people, an excess of worldly goods was a hindrance rather than an asset. The Eskimos did not know war. Some groups fought sporadically with neighbouring Indians, but among each other they lived in peace, although one Eskimo might occasionally kill another in a fit of temper. Above all, the Eskimos had the happy facility to live for the present and to enjoy it fully. They took life as it was, enjoyed the happiness each day might bring, and endured, with a certain fatalism, its hardships.



The cannery at Rankin Inlet gives employment to the village's Eskimo residents.



An Eskimo sculptor hews soapstone with a hatchet before he begins to carve.

The advent of white men and their goods changed the fragile fabric of this ancient, self-contained hunting culture. Whalers decimated the Arctic's wildlife wealth, the basis of the Eskimos' existence. They brought diseases to which the Eskimos had little resistance, and they died in large numbers. To obtain the white man's superior weapons and tools, most Eskimos became trappers. Slowly their ancient autarky ceased, their dependence increased, and their old way of life passed away.

In Canada, at least 95 per cent of all Eskimos now live in settlements. They enjoy the physical comforts and security southern technology has brought them: large well-heated houses; washing machines; freezers; and supermarkets. But many still long for the simplicity and emotional security, and the freedom, of their former lives. The challenge for the future is to ensure that the Eskimos are full partners in the new North and that they find a rich and fulfilling role in its development, without losing their identity as Innuits—the people, as they proudly call themselves.



## The Arts

### Government and the Arts

The federal government finances cultural activities in Canada through a number of independent agencies, most of them reporting to Parliament through the Secretary of State. The Canadian Broadcasting Corporation, the National Film Board, the National Museums, the Canada Council, the National Library and Archives, the Canadian Radio and Television Commission and the Canadian Film Development Corporation all come within this category. In 1971-72, appropriations for these nine agencies came to \$246 million, of which the CBC accounted for \$181 million. The total Canada Council arts subsidy for 1969-70 was \$9,435,000, of which \$5,022,000 represented assistance to 41 performing arts organizations. Grants to these organizations alone from other levels of government were \$2,780,000, with \$2,681,000 in private donations.

### Theatre

Canadian theatre now has its long-awaited focal point. In Ottawa, the National Arts Centre provides a national stage for a variety of Canadian companies. The Stratford National Theatre, the *Théâtre du Nouveau Monde*, the *Théâtre du Rideau Vert*, the Vancouver Playhouse, the Charlottetown and the Shaw Festival companies have all appeared there, along with smaller companies like Theatre Calgary, the Canadian Mime Theatre, and the *Cercle Molière* from St. Boniface. In May 1971 the National Arts Centre hosted the Dominion Drama Festival's first invitational and non-competitive venture. Under the new name of Theatre Canada, the festival invited all Canadian drama groups to come to Ottawa and present a national showcase of theatre. Groups from as far afield as Labrador City, Sault Ste. Marie, and Victoria accepted.

Meanwhile, under the auspices of the NAC Youth Department, a highly successful Student Young Company was formed in 1970, in co-operation with the Ottawa Board of Education. Under Ron Singer's direction, the Company performed *The Serpent* by Jean-Claude van Itallie, and *A Comedy of Errors* to critical acclaim and enthusiastic high school audiences.

Canadian playwrights and *avant-garde* theatre generally have found a platform in Toronto in the Factory Theatre Lab, the Backdoor Theatre, the Toronto Actors' Studio, the Theatre Passe Muraille, Toronto Workshop Productions, Studio Lab, and the Global Village, all of which contributed to the happy state of affairs observed by the late drama critic Nathan Cohen in December 1970: among the fourteen productions then playing in Toronto, only one, at the O'Keefe Centre, had an out-of-town cast.

Since its opening in 1970, the St. Lawrence Centre has provided a new home for live theatre in Toronto, as well as a forum for community activities. Under Leon Major's direction in 1970-71, the Centre produced the North American *première* of Christopher Fry's new play, *A Yard of Sun*. Other offerings included the popular Zindel play, *The Effect of Gamma Rays on Man-in-the-Moon Marigolds*, Brecht's *Puntilla and Matti, His Hired Hand*, and Ibsen's *An Enemy of the People* in an

adaptation by Betty Jane Wylie which set the timely topic of pollution in a modern Saskatchewan background. This production played at the National Arts Centre in 1971.

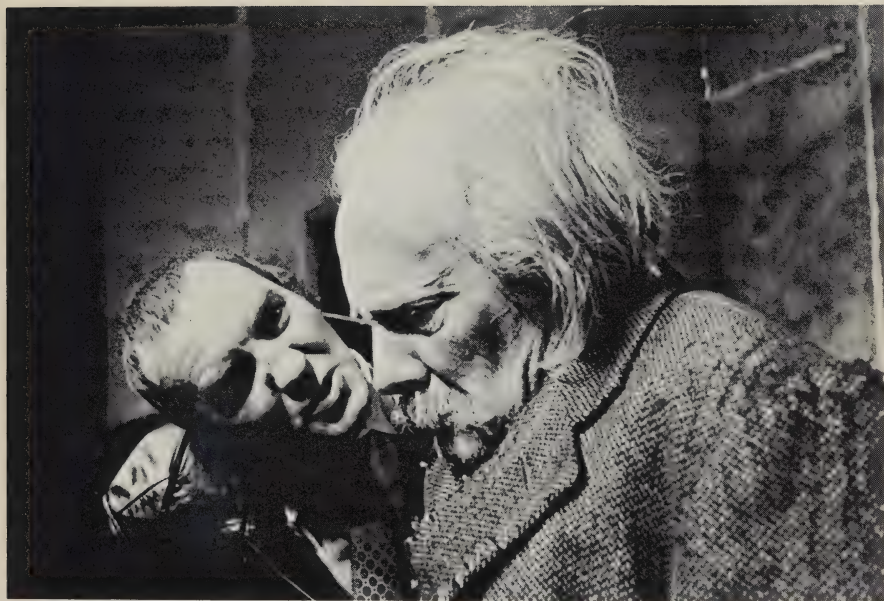
In its second season, the St. Lawrence Centre shifted away from the experimental Canadian productions which characterized its first year. However, under their resident dramaturge John Douglas, the Centre presented a series of new studio works by Canadian writers in the Town Hall.

Toronto played host to an underground theatre festival in July 1970, with the aid of a Canada Council grant. Montreal's *Théâtre du Même Nom* was one of the festival's successes, with its production of *Si Aurore m'était contée*. Also in Toronto, the rock musical *Hair* closed after running for a full year, setting a new Canadian record in longevity.

In Montreal, the *Théâtre du Nouveau Monde*'s production of *La Guerre, Yes Sir!*, the first play by the well-known novelist Roch Carrier, was well received by theatre goers. The production went to Europe on tour in the spring of 1971, along with the company's version of *Tartuffe*. Ionesco's *Jeux de Massacre*, presented by the *Théâtre du Nouveau Monde* in the 1970 winter season was a "study of death

At the St. Lawrence Centre for the Arts in Toronto, Ont., Dawn Greenhalgh and Gale Garnett perform *The Effect of Gamma Rays on Man-in-the-Moon Marigolds*.



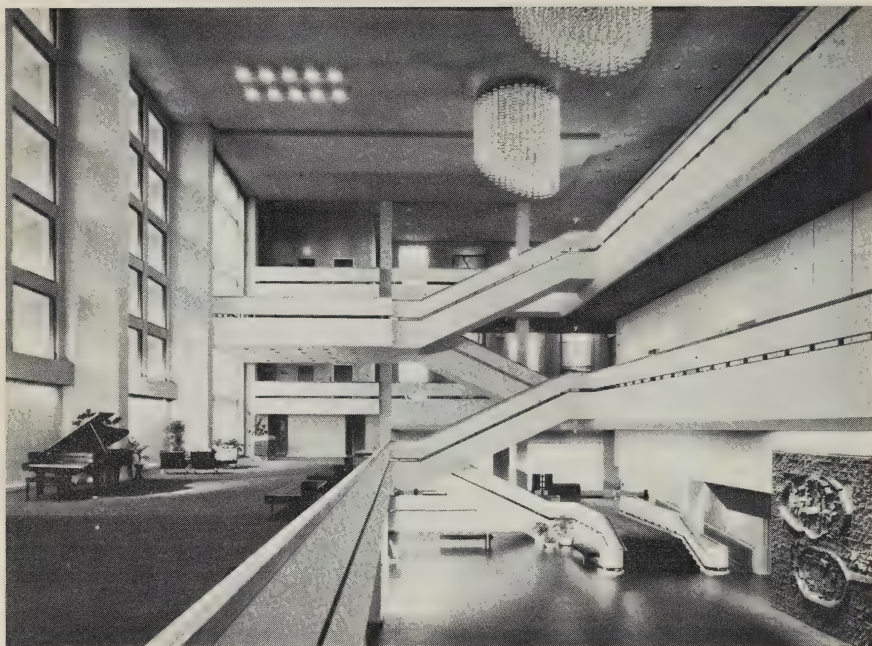


Harold Pinter's *Caretaker* is performed at the Neptune Theatre in Halifax, N.S.

A lively scene from *La Guerre, Yes Sir!* by Roch Carrier played to full houses at the Port Royal Theatre in Montreal, Que.







The Centennial Concert Hall in Winnipeg, Man., is the permanent home of the Winnipeg Symphony and the Royal Winnipeg Ballet.

which seemed written for the events of October", according to Montreal theatre critic Zelda Heller. In April, the company's production of Molière's *Le misanthrope* played at the National Arts Centre.

The *Théâtre du Rideau Vert*, French Canada's oldest permanent company, presented Feydeau's *La dame de Chez Maxim*, Chekhov's *La cerisaie*, and Giraudoux's *Ondine* in 1970-71. The company's celebrated seasonal offering, *L'oiseau bleu* by Maurice Maeterlinck, was presented for the first time in Ottawa at the National Arts Centre in January 1971.

A play about the racial troubles at Sir George Williams University, *The Great White Computer* by Peter Desbarats, was directed by John Juliani for Montreal's Centaur Theatre in 1970. At the *Théâtre de Quat'Sous*, Michel Tremblay's adaptation of *The Effect of Gamma Rays on Man-in-the-Moon Marigolds* was the highlight of their 1970-71 season, playing to overflow audiences.

Montreal's lively but tiny *Théâtre du Même Nom*—composed of five actors and an artistic director, all graduates of the National Theatre School—continued to make a name for itself, improvising, evolving, and generating shows in music-drama form, all irreverent, all topical and all touched with what one critic described as "a passionate commitment to the times."

Quebec City's new, professional *Théâtre du Trident* opened the 1971 season with *O-71* by Jean Barbeau, in the Studio at the *Grand Théâtre*. Another original work, John Thomas McDonough's *Charbonneau et le Chef*, was also produced at the Studio. Quebec province is well served by two touring companies created by the provincial government: the *Théâtre Populaire du Québec*, and the *Nouvelle Compagnie Théâtrale*. The latter's program of French classical drama follows the school curriculum.

Young French-speaking playwrights are helped by the Canada Council grant to the *Centre d'Essai des Auteurs Dramatiques*, which prints and distributes plays, holds workshops, and organizes critical discussions. As the theatre grows, so does the need for actors, designers, and technicians trained and developed in the English and French sections of the National Theatre School. Various provinces now offer the school some support, augmenting the substantial Canada Council grant.

At the Vancouver Playhouse, the 1970-71 season included *Rosencrantz and Guildenstern are Dead*, which played to near-capacity audiences, and the successful *Joe Egg*. There was also Shakespeare's *Othello*, a choice of play shared by Edmonton's Citadel Theatre and the Centaur Theatre in Montreal. Paxton Whitehead, who succeeded David Gardner as artistic director, planned to open the 1971-72 Vancouver Playhouse season with Feydeau's *The Chemmy Circle*, a play which he had earlier directed for the Shaw Festival.

Canada's foremost regional theatre, the Manitoba Theatre Centre, moved into its

The Saskatchewan Centre for the Arts contains a 2,000-seat theatre, Hanbridge Hall, which will seat 1,600, and the Jubilee Theatre with 800 seats.







*Le Grand Théâtre de Québec* was opened early in 1971. It contains an 1,800-seat hall, a 600-seat theatre as well as Conservatory studios, a library, and a *discothèque*.

new multi-million dollar home in November 1970. The first celebration season saw the return of directors John Hirsch and Edward Gilbert, and two Canadian *premières*: *Salvation*, Winnipeg's first rock musical, which was seen by over 16,000 people, and Tolstoy's *War and Peace*.

The Globe Repertory Theatre became Regina's first resident theatre company in 43 years, when the Jubilee Theatre in the new Saskatchewan Centre of the Arts became its official home in 1970. Theatre Calgary, now in its third season in a converted warehouse, survived a financial crisis in 1970, and delighted audiences at the National Arts Centre with Christopher Newton's local documentary with music, *You Two Stay Here, the Rest Come With me*. A second, original musical, *Trip*, written and directed by Newton, with music by Allan Rae, was also staged by Theatre Calgary. At Edmonton's Citadel Theatre, where Sean Mulcahy is artistic director, Arthur Miller's play *The Price* was a hit in 1970. The Citadel, named after the former Salvation Army Centre which it occupies, is looking for a larger home. With only 300 seats available, its 1970-71 season was fully subscribed, and scalpers were to be found flogging tickets for such productions as *The Secretary Bird*, starring Henry Comor and Jill Showell. As an extension of their regular activities, members of the company appear throughout the province as the Citadel-on-Wheels. An airborne version, the Citadel-on-Wings, gave 22 performances in the Canadian north in 1970, as Edmonton's gift to the Northwest Territories Centennial.



The only full-time professional repertory company on the Atlantic seaboard, the Halifax Neptune Theatre included in its 1970-71 season performances of *The Caretaker* by Harold Pinter, *A Long Day's Journey Into Night*, *The Fantasticks*, and Neil Simon's *Star-Spangled Girl*. After extensive renovations to the Fredericton Playhouse, Theatre New Brunswick's auditorium was scheduled to re-open in January 1972, as a refurbished link in the chain of regional theatres.

The Canadian Mime Theatre, a six-member troupe with headquarters in a converted firehall at Niagara-on-the-Lake, has received much critical acclaim since its foundation in 1969. It toured the Northwest Territories in 1970, with the aid of a Canada Council grant, and in 1971 brought an original two-hour mime drama, *The Lamplighter* to the National Arts Centre. At Stratford's "Third Stage in the Park," the Canadian Mime Theatre performed *Shapes and Shadows* in August.

## Festivals

Each year the Stratford Festival is a mecca for theatre lovers from all over North America. In 1971 Pat Galloway appeared in the title role of John Webster's *Duchess of Malfi* and played opposite Ian Hogg in *Macbeth*. William Hutt directed *Much Ado About Nothing* and appeared in Ben Jonson's *Volpone*, along with Douglas Rain. The Avon Theatre offered two French farces, *An Italian Straw Hat*



One of the attractions at the Guelph Spring Festival in May 1971 was the Black Box Theatre, which performed "visualized music."

and *There's One in Every Marriage*, with Martha Henry and Tony van Bridge appearing in the latter.

Stratford's International Film Festival was revived in 1971, after a regretted ten-year lapse, presenting a wide selection of films from around the world, on a non-competitive basis. And the new Third Stage in the Park featured drama, mime and puppets under the trees.

The Shaw Festival at Niagara-on-the-Lake broke all previous box office records in 1970, when it presented *Candida*, starring Stanley Holloway as Candida's father, and *Forty Years On*, Alan Bennett's allegory on the first half of the twentieth century, and the first contemporary play produced as part of the Festival. In 1971, the Shaw Festival celebrated its tenth anniversary season with a program of Shaw, Romain Weingarten, Max Beerbohm, and Noel Coward. Shaw's *The Philanderer* opened the season in June, and Weingarten's *Happy Days of Summer* had its North American première at the Festival.

At Prince Edward Island's Charlottetown Festival, *Anne of Green Gables* played to 92 per cent capacity audiences in 1970 after 23 performances at Osaka, where it was the only western musical. *Jane Eyre*, a Victorian classic in musical form, with appropriate moments of melodrama, attracted full houses in Charlottetown. The Festival production came to the National Arts Centre in 1971, together with *Private Turvey's War*, in which Don Harron re-introduced Turvey in a "militantly pacific" production. *Mary*, based on the life of Mary Queen of Scots, had its première at Charlottetown in 1971, and *Anne of Green Gables* was revived again, to meet popular demand.

In British Columbia, productions of *The Duchess of Malfi*, *Androcles and the Lion*, and *Turcaret* were featured at the 1970 Victoria Fair.

## Dance

1970 marked the appearance of two successful rock ballets: the Royal Winnipeg Ballet's *Ballet High*, and the *Grands Ballets Canadiens' Tommy*. 1970 was also the year when the CBC won an Emmy for *Cinderella*, featuring the National Ballet.

The only ballet company to appear at Expo 70, the National Ballet took *Romeo and Juliet* and a program of modern ballet to Osaka in May 1970. For the 1970 season, the company revived *Giselle* for the first time in nearly ten years. Lynn Seymour and Egon Madsen appeared in Peter Wright's re-creation of the 1841 Paris version. Also in the repertoire were *Swan Lake*, choreographed by Erik Bruhn, Kenneth MacMillan's *Solitaire*, Flemming Flindt's *The Lesson*, and Grant Strate's *Phases*. Attendance in the 1970 Toronto spring season was 80.2 per cent of capacity.

In July 1970, Celia Franca, the National Ballet's artistic director, was one of an international panel of judges at the Fifth Annual International Ballet Competition at Varna, Bulgaria, one of the world's most important dance festivals. Competitors came from seventeen different countries, and Nadia Potts and Clinton Rothwell of the National Ballet won the award for the most artistic over-all performance as a duet.

The National Ballet School is developing young Canadian choreographers, and has already taken the work of one of them, Timothy Spain, into its repertoire: *For*



Royal Winnipeg Ballet dancers in a scene from Brian MacDonald's *5 over 13*. The ballet was commissioned for this company.

*International Use Only*, *The Journey Tree*, and *Sagar*. Elsewhere in the Toronto area, York University is the first such institution to offer a course in dance to students in its Faculty of Fine Arts.

*Tommy*, a rock opera based on a creation of the English pop group, The Who, opened the *Grands Ballets Canadiens*' 1970-71 season. Danced to a taped recording by The Who, *Tommy* had its world *première* on October 16 at Montreal's *Place des Arts*. *Tommy*'s choreographer Fernand Nault was also responsible for the *Symphony of Psalms* and for *Aurkhi*, a work by the contemporary Polish composer, Krystof Penderecki. The *Grands Ballets Canadiens* went on tour in the United States in May 1971.

One of the successes of the Royal Winnipeg Ballet's 1970 season was *Ballet High*, a production incorporating the rock group Lighthouse. The work had its *première* at the National Arts Centre at the end of July 1970, in a program which included *The Shining People of Leonard Cohen* and *5 Over 13*. All three were choreographed by Brian MacDonald. *Ballet High* sold out in Toronto and was held over for a second full week at the St. Lawrence Centre. The Royal Winnipeg Ballet took *The Shining People* and a work entitled *Canto Indio* to Paris, Verona, and Genoa in 1970. The company spends a great deal of its time touring, and makes an annual visit to the United States. Between January and March 1971, it visited 40 American cities during its eight-week tour.



In 1970, the Royal Winnipeg Ballet's artistic director, Arnold Spohr, received the Service Medal of the Order of Canada, presented by the Governor-General on Canada Day.

In the field of modern dance, the Toronto Dance Theatre and Montreal's *Groupe de la Place Royale* both performed at the National Arts Centre during 1970-71. Manitoba's new, professional group, the Contemporary Dancers, presented programs in Winnipeg and throughout the province.

The *Feux Follets*, Canada's national folk ensemble, toured Canada after their return from Osaka, where they performed in the Canadian Pavilion throughout Expo 70.

## Music

While 1970-71 was generally a year of austerity, it saw the creation of two new musical organizations: the *Opéra du Québec*, which will perform principally in Montreal and Quebec City, beginning in 1971-72, and the *Jeunesses Musicales* World Orchestra, which was founded at Mount Orford in July 1970, marking the twentieth anniversary of Canada's participation in the *Jeunesses Musicales*.

To support the new Orchestra, the Canadian Government has pledged \$35,000 annually for the first five years. Twenty countries sent 100 musicians aged 16-23 to work under conductor Erich Leinsdorf in July 1970. Fourteen of the young musicians were Canadian. After its first performance in August at the Orford Festival, the Orchestra had its world *première* in Copenhagen, Denmark, in August 1970. Records of the concert were made and the CBC television documentary about the Orchestra's first season was seen on both French and English networks.

Two violin students discuss their music during a rehearsal of the National Youth Orchestra.



Quebec celebrated the formation of its own opera company in 1971. Under artistic director Léopold Simoneau, four operas are scheduled for the *Opéra du Québec*'s first season: *Samson et Dalila* by Saint-Saens, Puccini's *Tryptich*, *La Fille du Régiment* by Donizetti, and Verdi's *La Traviata*.

The Canadian Opera Company's 1970-71 productions included *Carmen* and *Don Giovanni*, both of which went to the National Arts Centre in the fall.

The National Arts Centre Orchestra, now in its third year, is both a popular and artistic success under conductor and musical director Mario Bernardi. In 1970 the Orchestra's first record was issued: Mozart's *Jupiter Symphony*, and Harry Somers' *Five Songs for Dark Voice* with contralto Maureen Forrester. In 1971 the Orchestra began its eagerly-awaited national touring program with visits to Toronto, Winnipeg, Regina, Saskatoon, Edmonton, and Vancouver.

The Montreal Symphony Orchestra played at Expo 70 in Osaka, to much acclaim. Later, in Montreal, over 2,800 people attended each of the first fourteen *Grands Concerts* and the four gala concerts of the 1970-71 season.

Under an exchange arrangement in December 1970, the Montreal Symphony played in Massey Hall in Toronto while the Toronto Symphony was heard in Montreal's *Place des Arts*, under Karel Ancerl's direction. The Toronto Symphony Orchestra reached peak form in June 1970 during the Beethoven bicentenary celebration, when it filled the O'Keefe Centre for its performances.

Under its new conductor Maurice Handford, the Calgary Philharmonic Orchestra showed much promise in 1970. And the Hamilton Philharmonic Orchestra, under the energetic leadership of Boris Brott, played in schools and shopping plazas, and performed at candlelight concerts featuring wine-and-cheese suppers and personalities such as Pierre Berton, narrating Stravinsky's *Soldier's Tale*. The first pop group to take up residence with a symphony orchestra, Tranquility Base, began playing with the Hamilton Philharmonic in the spring of 1971. So did a string quartet from the National Arts Centre Orchestra, known as the Revolutionary Bow, which emphasizes its involvement in "the emotional, social and audio issues of a younger generation in a classical context."

A tangible expression of Maritime co-operation, the Atlantic Symphony Orchestra, now in its fourth season, gave a Beethoven Festival in November 1970 in association with Dalhousie University and the CBC.

The National Youth Orchestra celebrated its tenth anniversary in July 1970 at the National Arts Centre, with the performance of a work by Serge Garant, commissioned by the Canada Council and written expressly for the orchestra. For its 1971 season, more than 350 applicants were auditioned across Canada for the 110 available places. Georg Tintner, well known in Australia and New Zealand, was the orchestra's conductor in 1971.

Pursuing its policy of performing works by Canadian composers, the Quebec Symphony Orchestra played compositions by Jacques Hétu, Clermont Pépin, and Alain Gagnon in early 1971. Gilles Vigneault appeared with the Quebec Symphony Orchestra at the opening festival.

Canada's summer festivals provided an attractively varied musical offering in 1970. The Orford Festival presented pianist Marek Jablonski, the *Orchestre de chambre Paul Kuentz de Paris*, and singers Elizabeth Benson-Guy and Maureen Forrester.



The National Gallery in Ottawa sponsored a concert of Renaissance music amid the gallery's collection of Renaissance paintings.

The Guelph Spring Festival entered its fourth year in 1971, when its theme was the development of music in Canada. With the help of a Canada Council grant, the Festival commissioned two original works, by André Prévost and Charles Wilson. In May, Nicholas Goldschmidt directed the first Canadian production of Benjamin Britten's *The Burning Fiery Furnace* at Guelph.

At Niagara-on-the-Lake, the Orford Quartet represented the Shaw Festival's first venture into the field of music in 1970. In 1971, the Stratford Festival offered concerts, chamber music recitals, and pop music, with soloists ranging all the way from cellist Janos Starker and flautist Jean-Pierre Rampal to Melanie and B.B. King.

Victoria Fair in 1970 commissioned a successful music drama entitled *The Ancient Wound*, with music by Wilfrid Mellers and text by Peter Garvie. The work was broadcast on the CBC in January 1971 and performed at Benjamin Britten's Aldeburgh Festival in June 1971. It was also published as a paperback in the Victoria Fair drama series.

*La Société de Musique Contemporaine du Québec*, one of Canada's leading exponents of the musical *avant-garde*, made its Toronto debut in January 1971 under the direction of Serge Garant.

Toronto's Festival Singers opened their 1971 European tour in Brussels, before



appearing in London, Cologne, Vienna, Bratislava, Venice, Zagreb, and Ljubljana. The Festival Singers' founder and conductor Elmer Iseler also conducts the Mendelssohn Choir, which had a successful 1970-71 season, and which will present a Promenade Concert at the Royal Albert Hall, London, in August 1972.

Montreal was the setting for an important international piano competition in 1971, hosted by the *Institut International de musique du Canada*.

A new periodical launched with Canada Council assistance, *The Canada Music Book/Cahiers canadiens de la musique*, is published by the Canadian Music Council and includes essays and articles by eminent composers as well as by musicologists and critics. Another Canada Council grant enabled the important work edited by Dr. Arnold Walter, *Aspects of Music in Canada*, to be translated into French.

## The Visual Arts

If the arts generally show all the signs of a period of transition, and inevitably of confusion, nowhere are these more apparent than in the visual arts. While younger artists and performers in a variety of fields are channelling their particular talents into social statement and social commitment, many visual artists have moved away from the creation of beautiful art objects, intended for pleasure and contemplation. Instead they have turned to the production of disposable and intentionally unsaleable objects, as an expression of contemporary values, and as a rejection of an élitist culture.

Not every artist, of course, has taken this path. And this period of transition is also one of self-discovery, as Canadian artists become increasingly aware of their distinctive, regional roots. In the visual arts, as in publishing and the performing arts, there is a strong sense of regional identity. It is developing in Halifax, among artists associated with the Nova Scotia College of Art. It has existed for ten years among London, Ont., artists, of whom Greg Curnoe and Jack Chambers are well known representatives. It is already firmly established on the west coast, where the Vancouver Art Gallery is an important forum for mixed media experiments.

The Vancouver Art Gallery has become what one critic called "a model for tomorrow" in abolishing the barriers between different forms of expression, and between artists and the public. Its highly-successful Racetrack Gallery, an experiment in community involvement in multi-media, was succeeded in 1971 by Satellite, in co-operation with Intermedia. The Vancouver Art Gallery is also active in the gallery's more traditional role: its Eskimo sculpture exhibition, *Masterworks of the Arctic*, had its world première in October 1971, after which it was scheduled to travel to Paris, London, Copenhagen, and various United States cities before returning to Canada and the National Gallery in Ottawa.

In Ottawa, the National Gallery had 156,971 visitors from June to September 1970, during the major exhibition of works by the *Group of Seven*. In 1971, National Gallery exhibitions included drawings by the famous 18th-century artist Giambattista Tiepolo, pictures from the Gertrude Stein estate, and Joyce Wieland's *True Patriot Love*, which opened on the eve of July 1, Canada Day.

The National Gallery received a large gift from the Douglas M. Duncan Collection in 1970, including 225 works by David Milne. Other acquisitions included

*Big Ear*, a sculpture by Karel Appel, and oil paintings by Marc Chagall, Piet Mondrian, and Gustav Klimt.

Eight Artists from Canada, an exhibition which opened in Tel-Aviv in November 1970, marked the first occasion that the National Gallery had sent Canadian works to the Middle East. In 1971, a Paul Kane exhibition, co-sponsored by the National Gallery, opened in Fort Worth, Texas, providing a unique oil and water-colour documentation of the Indian people of the west. The exhibition was seen in the United States and western Canada, before going to Toronto and Ottawa.

At the end of 1970, the Art Gallery of Ontario published a comprehensive reference work entitled *The Canadian Collection*. The timing was appropriate, because 1970 was the year the Gallery received more gifts from Canadian collections than in any other single period. It was presented with the Samuel and Ayala Zacks collection, and works from the Charles S. Band, Douglas M. Duncan, and J. S. McLean collections. Three hundred and fifty 20th-century paintings from the Zacks collection were on show in the summer of 1971.

As one part of its effort to involve people in the community at large, the Montreal Museum of Fine Arts planned a series of exhibitions of paintings and sculpture in the city's Metro stations. Outside the Museum itself, on Sherbrooke Street, one of its most recent acquisitions became a new Montreal landmark: Hugh A. Leroy's *Four Elements Column*. The work of two of Canada's leading graphic designers, Rolf Harder and Ernst Roch, was presented at the Montreal Museum in November 1970, launching an extensive international tour under the auspices of the International Centre for the Typographic Arts.

*Arts-Canada*, which has earned increasing respect at home and abroad as an arts magazine, devoted its October 1970 issue to North American drawing, and thereby provided the inspiration—and the research—for an exhibition at the Boston Institute of Contemporary Art. Also in 1970, the International Association of Art Critics held its annual meeting in six Canadian cities.

P.-E. Borduas' "Amphitheatre of Lutetia" was a recent gift from the Douglas M. Duncan collection.







In 1969 the National Gallery acquired "A View of the First Monastery of the Ursulines in Quebec City," by the 19th century artist, Joseph Légaré.

## Writing

While fears of foreign takeover were prevalent in 1970-71, the respected review *Canadian Literature* noted what it called a revolution in publishing in Canada, in the growth of vigorous, regional houses in such centres as Edmonton, Vancouver, Victoria, Fredericton, and Ottawa, as well as in Montreal and Toronto. This development was accompanied by the emergence of a formidable publishing underground, pioneered by Raymond Souster and Louis Dudek, the most striking phenomenon being the emergence of Toronto's House of Anansi and New Press. Both, said *Canadian Literature*, are run by young, dedicated writers, experimental in their approach to writing and radical in their approach to social change. While New Press has concentrated on the new politics and related social questions, Anansi has emphasized verse and experimental fiction. Anansi's 1970 output included translations of two French Canadian authors: Roch Carrier's novels, *La Guerre*, *Yes Sir!* and *Floralie, où es-tu?* and Hubert Aquin's *L'antiphonaire*.

Among new publishing centres in Canada, Fredericton, home of *The Fiddlehead* for the past 26 years, now has a number of small presses: New Brunswick Chapbooks, the Observatory Press and Fiddlehead Poetry Books. Poet Alden Nowlan continues to be writer-in-residence at the University of New Brunswick, in Fredericton, which is now the centre for more than a dozen poets, from the Maritimes, the United States, and Britain. The dean of them all, Fred Cogswell, recently published *One Hundred Poems of Modern Quebec*, translated from the French.



The 1970 Governor-General's Literary Award to bpNichol, an experimental poet dealing in concrete and sound poems, marked both recognition of a new mood in Canadian writing and the importance of the new, small publishers in Canada. Three of Nichol's award-winning books were published by presses in Vancouver, Toronto, and Ottawa: *Still Water* (Talonbooks), *The True Eventual Story of Billy the Kid* (Weed/Flower Press), and *the cosmic chef: an evening of concrete* (Oberon Press).

Four other Canadian writers received 1970 Governor-General's Awards for Literature. They were: Dave Godfrey, for his novel *The New Ancestors*; Michael Ondaatje, for a book of prose and poetry, *The Collected Works of Billy the Kid*; novelist Monique Bosco, for *La femme de Loth*, and playwright Jacques Brault, for *Quand nous serons heureux*. The award-winning books were chosen from an estimated 300 literary works published by Canadians in 1970. Cash prizes of \$2,500 apiece accompanied the awards, presented in Ottawa on May 18, 1971, by the Governor-General, His Excellency the Rt. Hon. Roland Michener. Another award was declined by Fernand Ouellette, whose book of essays, *Les actes retrouvés*, had been chosen by the jury.

There were many other works of note in 1970-71. Anne Hébert's novel *Kamouraska* won *le prix des libraires* in Paris in March 1971, the same month that Gaston Miron was awarded the city of Montreal's Grand Prize for Literature for his books of poems *L'homme rapaillé*. Miron, whose work had already won the tenth Prix France-Canada in November 1970, is representative of many Quebec writers who are increasingly involved in political events in the province.

*Le Prix de la revue Études françaises* was awarded to the Moroccan-born poet Juan Garcia, whose *Corps de gloire* was published by the Presses de l'Université de Montréal in 1971. Gabrielle Roy won the 1970 *Prix David* for her novel *La rivière sans repos*.

Each year the Molson Prizes are given by the Canada Council for outstanding contributions to the arts, humanities, and social sciences, and to national unity. Northrop Frye won a 1971 Molson Prize for his role in expressing Canada's cultural identity. His new work, *The Bush Garden: Essays on the Canadian Imagination* appeared in 1971. Yves Thériault, a widely read and translated French Canadian novelist, was another Molson Prize winner. His latest publication is *Le dernier havre*.

Other important publications in 1970 and 1971 were: *The Journals of Susanna Moodie* and *Procedures for Underground* by Margaret Atwood; *Butterfly on Rock* by D. G. Jones; Donald Creighton's controversial *Canada's First Century*, and Pierre Berton's best-selling history of the CPR, *The National Dream*. Farley Mowat, who published *Sibir* in 1970, received the Stephen Leacock award for humour for his earlier book, *The Boat Who Wouldn't Float*.

The translation of French Canadian works for publication in English Canada has already been mentioned. In Quebec, the literary magazine *Liberté* devoted a whole issue to English Canadian fiction writers in French translation. A growing interest among French Canadians in English Canadian literature can be seen in the reviews of new works appearing regularly in *Le Soleil*, as well as in *La Presse* and *Le Devoir*. As further evidence of this trend, a translation of Carl Klinck's important *Literary History of Canada* is being published by the Presses de l'Université Laval.

# Scientific Activities

## Scientific Research and Development

During the past few years world society has begun to realize that science and technology have become powerful forces. Although able to provide great benefits, they can also cause serious damage to the physical and social environments. This realization has generated public interest in immediate problems, the most significant of which are pollution, drugs, and national resources. Corrective measures for existing unsatisfactory situations are being demanded, and research and development in these areas have become urgent, in many cases to gather background information for legislation that might control these situations. Conflicting opinions are commonly expressed, but the potential dangers inherent in the uncontrolled exploitation of science and technology have been exposed and it is certain that no major innovation will be introduced in future until the consequences have been thoroughly explored. Science policy has suddenly become of considerable importance, both nationally and internationally.

A Black Brant sounding rocket leaving the Auroral launcher at the Churchill (Man.) Research Range. Upper atmosphere research is carried out at Canadian universities and several government establishments.



## Federal Science Policy

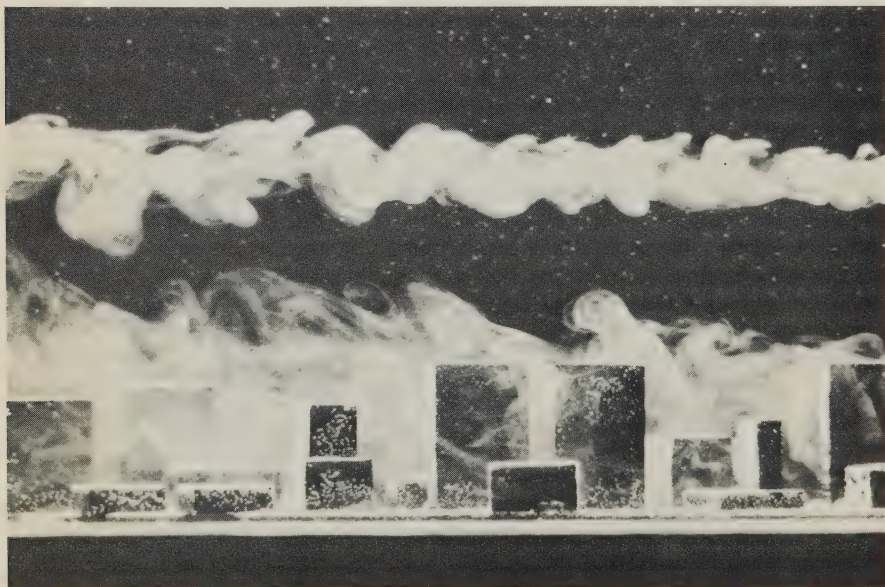
The over-all authority for federal science policy rests with the Cabinet, which obtains advice from all departments and agencies having scientific interests. The Privy Council Office includes a Secretariat for Science Policy and Technology which is responsible for assuring the optimum use of science and technology in support of national objectives. There is also the Science Council, an independent body, which reports direct to the Prime Minister, and has the duty of making recommendations on the long-term requirements and potentialities of Canadian scientific and technological resources.

In November 1967, the Senate set up a special committee to consider and report on the science policy of the federal government with the object of appraising its priorities, its budget, and its efficiency. The first volume of its report was issued in 1970 and presented a critical review of the Canadian scientific scene. The second volume contains recommendations.

## Research Activities of the Federal Government

**The National Research Council of Canada** is an operational agency of the federal government with responsibility for the development, maintenance, and

A miniature city model in the flow visualization tunnel at the Low Speed Aerodynamics laboratories of the National Aeronautical Establishment. Dye injected into the water shows the flow pattern around the buildings.





application of science. Although basic research is carried out in its laboratories, the research programs are generally oriented towards the support of industry. Recently it has become involved with important national and regional problems.

As examples of current activities, the National Research Council has developed a blood cooler which has made possible advances in brain surgery, a technique to extend the shelf life of fresh beef during transportation, a new family of fungicides to control mildew, and an instrument to measure continuously the water content of butter during manufacture; it is contributing to the development of a much enlarged harbour at Visakhapatnam in India, and of vertical and short take-off and landing (V/STOL) aircraft in Canada with its new 30-foot low-speed wind-tunnel and airborne simulator; it is involved in the development of computer-aided learning techniques, of a fluid velocity sensor for use in oceanography, and with the development of seaweed crops as a source of food. Another interesting program uses wind tunnels to assist in the design of buildings and urban planning.

The NRC has a number of associate committees which have been set up and act as expert advisory panels to the federal and provincial governments, the universities, and industry in regard to specific problems. The latest of these is concerned with scientific criteria for environmental quality.

Research is also carried out by several departments and agencies of the government in keeping with their objectives. Among these are the Department of Agriculture and the Fisheries Research Board (see below), and the following:

**Atomic Energy of Canada Limited** has developed a small nuclear reactor, known as "Slowpoke," as an inexpensive source of thermal neutrons for activation analysis and isotope production. Other research in support of the nuclear power program includes studies of the texture and mechanical properties of zirconium alloys for fuel cladding and reactor pressure tubes, and the simulation of fission damage in experimental reactor fuels.

**The Department of Communications.** Research in communications and associated fields is carried out at the Communications Research Centre. At the present time most of this work is directed towards satellite communications projects in continuation of the highly successful Alouette ISIS program. The Centre is now involved in the initial stages of a joint Canadian/American communications technology satellite.

**The Defence Research Board — Department of National Defence.** DRB provides scientific and technical support for the Canadian Armed Forces and carries out research activities in seven establishments across Canada. A great deal of its effort is being directed towards Arctic research, but two other specific items are worthy of mention. A new technique has led to the successful production of prototype carbon dioxide lasers operating at atmospheric pressure, simply constructed out of inexpensive materials and with about 100 times the power of conventional gas lasers. Two Canadian companies have been licensed to produce these devices. A major study of the pattern of ice drifts in the Gulf of St. Lawrence has been carried out using buoys with current meters attached which were frozen in the ice. A continuous record of buoy pattern and current strengths was made and it is hoped that



The movable-bed mini-model of the St. Lawrence River developed by the Ministry of Transport. The photograph shows the Lake St. Peter—Île aux Coudres reach.

the project will lead to greater use of St. Lawrence ports and help reduce shipping insurance.

**The Department of Indian Affairs and Northern Development** carries out social, economic, and technical research in the north and also, by means of grants, it encourages northern research in Canadian universities. One important current program is directed towards the drawing up of effective land use regulations.

**The Ministry of Transport.** A large part of the research carried out by this department is concerned with the St. Lawrence shipping channel. The department is experimenting with the use of unusually small-scale hydraulic models and it has obtained valuable information from a model reproducing in 100 feet some 180 miles of river. This will provide background information for a project to deepen the existing navigational channel below Quebec City to allow 100,000-ton tankers to enter the St. Lawrence. Another project that has produced good results is the use of floating booms which are particularly effective in controlling the formation of ice and of ice jams.

### Federal Assistance Programs

A number of programs designed to stimulate research development and innovation in Canadian industry have been set up by the federal government.

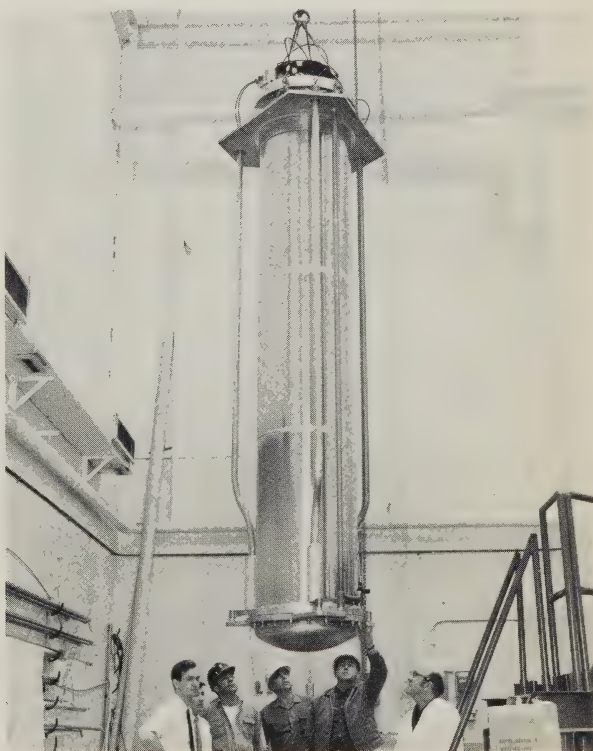
**The Industrial Research and Development Incentives Act.** This Act, which is administered by the Department of Industry, Trade and Commerce, is designed to provide general incentives to industry to expand research and development. Canadian companies may apply for a cash grant or receive a credit against their federal income tax liabilities that is related to their capital expenditures and their operational expenditures in Canada for scientific research and development.

**Industrial Research Assistance Program.** This program, which is administered by the National Research Council of Canada, is designed to promote the formation of new research groups and the expansion of existing groups in industry. Grants are made to pay the salaries of new or additional scientific and technical personnel engaged in approved research projects.

**The Defence Industrial Research Program.** Since its initiation by the Defence Research Board in 1961, over 300 defence-oriented projects have been financially assisted by this program.

**The Defence Industry Productivity Program.** This program supports the United States-Canada Defence Production Sharing Program; it is designed to enhance the

SLOWPOKE, the small nuclear reactor developed by Atomic Energy of Canada Limited, being lowered into a water bay prior to being brought into operation at the Chalk River Nuclear Laboratories.





technical competence of the Canadian industry. It is administered by the Department of Industry, Trade and Commerce, and is intended to assist in the development of products for export and the acquisition of modern machines, tools, and other advanced manufacturing equipment. Its specific aim is to maintain manufacturing standards and to help pay the pre-production expenses necessary to establish manufacturing sources in Canada for export markets.

**The Program for the Advancement of Industrial Technology.** This program is also administered by the Department of Industry, Trade and Commerce and was established to stimulate the growth of Canadian industry by providing grants for the development of new and improved products and processes that involve new technology and offer prospects for commercial exploitation. Projects supported under the program include hovercraft, undersea oil recovery systems, and peripheral computer hardware.

**The Industrial Research Institutes.** This program is also administered by the Department of Industry, Trade and Commerce and has the objectives of (1) fostering a closer relationship between universities and industry, thus assisting the universities to improve their understanding of the problems of industry, and helping industry to become acquainted with the latest scientific and technical developments; (2) facilitating the transfer of science and technology to industry; and (3) providing scientific services for industrial firms unable to maintain research facilities and personnel of their own.

Assistance takes the form of grants to cover salaries and administrative expenses. Institutes have been formed at the University of Windsor, McMaster University, the University of Waterloo, the Nova Scotia Technical College, and McGill University. Other Canadian universities are considering the establishment of similar facilities.

**Interdepartmental Committee on Innovation.** In an effort to improve the co-ordination of the various departments and agencies of the government concerned with the administration of industrial assistance programs, an Interdepartmental Committee on Innovation has been formed of the major participants, including the Department of Industry, Trade and Commerce, the Defence Research Board, the National Research Council, the Department of Finance, and Treasury Board. From the combined experience of their agencies, the members are devising improved incentive programs. Meetings have been organized with representatives of Canadian research and from these meetings has emerged a much clearer picture of the problems of industrial research and development in Canada.

### **Provincial Research Councils**

Provincial Research Councils are located in eight of the provinces—Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, Quebec, and Saskatchewan. The work carried out in these institutions is mainly applied research directed towards the support of provincial projects and local industry. The scope of the research is generally quite wide.

## University Research

To maintain the role of universities in providing advanced education and in training research personnel, it is essential that members of faculties retain positions in the forefront of knowledge in their respective disciplines. Academics have traditionally favoured basic research and the universities have become the principal centres of this activity. The actual research carried out at any particular university is generally related to the particular aspirations of its administration and the personal desires of its academic staff. However, by far the greatest proportion of funding for the natural sciences and engineering comes from the federal government through the National Research Council and the Medical Research Council. The programs of these two agencies are similar in that they award grants in response to applications from researchers, and their criteria for support are based mainly on the merits of the individual concerned and the excellence of his proposal.

Both the Atlantic regional laboratory of the National Research Council and the seaweeds division of the Nova Scotia Research Foundation are researching the cultivation of seaweed in anticipation of under-water seaweed farms' being established in Nova Scotia to increase the production of industrially valuable seaweed extracts.



## Health Science Research

Health science research in Canada differs from most other areas of research in that it is carried out, with only a few exceptions, in the universities and their associated institutions and hospitals. There is as yet limited health research in industry. A number of government agencies such as the Department of National Health and Welfare and the Defence Research Board undertake, in their own laboratories, some health research related to their particular responsibilities and the Department of Veterans Affairs has modest research programs in its hospitals across the country. At the provincial level, there are some research programs directed at the solution of local problems of health. There are however no large central laboratories, as in Great Britain or the United States, devoted to medical research.

It is, then, the university faculty members and their colleagues who constitute the great majority of Canada's health scientists. There are now some 1,800 project directors most of whom are located in the 16 universities across the country that have faculties of medicine, dentistry, and pharmacy. Many of these investigators combine their research activities with patient care or the teaching of personnel for the health professions; this joint commitment contributes to the maintenance of a high standard of health care and greatly facilitates the application to Canadian problems of the results of research done both in Canada and elsewhere.

The financing of the research effort is a partnership. The universities themselves with the assistance of provincial and federal governments provide the physical facilities for the research and, in large part, the salaries of the investigators. Financial support received from Canadian extra-mural sources for the operating costs of their research has been estimated at \$56.5 million for the 1970-71 fiscal year. Of this total, \$9.4 million was provided by voluntary agencies such as the National Cancer Institute of Canada, the Canadian Heart Foundation, the Canadian Arthritis and Rheumatism Society, and a number of other organizations, some concerned with specific diseases and others of less restricted interests. A further \$4.8 million was made available to investigators through provincial foundations or agencies. The Quebec Medical Research Council, for instance, contributes significantly to the establishment in research of newly-appointed faculty members in that province. Ontario provides operating grants to university faculty through a number of programs and provincial agencies. The major extra-mural source of operating funds for research, however, is the federal government which provided approximately \$42.3 million in the 1970-71 fiscal year. Of this total, \$33.9 million was channelled through the Medical Research Council. After operating as an autonomous agency within the framework of the National Research Council for ten years, the MRC was established as a departmental corporation in 1969 reporting to Parliament through the Minister of National Health and Welfare. The funds appropriated by Parliament for the Council are devoted exclusively to the support of extramural research through grants-in-aid, support of individuals in postgraduate research training, and other related programs.

Among important new developments in health science research in Canada one might mention the discovery in 1970, by investigators at the Montreal General





Experimental surgery is performed in the National Research Council's bio-engineering laboratories. The assessment of electrical hazards is among the subjects studied.

Hospital, of a blood test that can be used for the early detection of cancer of the large bowel. During that year, too, the MRC therapeutic trial of human growth hormone in the treatment of hypopituitary dwarfism entered the final stages; gratifying results have been shown in a group of over 90 patients across the country who have received treatment over a five-year period.

As in the case of all branches of Canadian science, there has been increasing interest in policy considerations relating to the health sciences and to health care and in the accumulation of data on which to base future development. A comprehensive review was carried out in 1967 under the aegis of the Medical Research Council and many of the recommendations made at that time have been acted on. The report of a further review of medical research, in Quebec specifically, was published in 1970. During that year, too, the results of a definitive survey of all full-time trainees in the health sciences in Canada were given wide distribution. The LeDain Commission on Non-medical Use of Drugs can also be expected to have its influence on the development of health science research in the years ahead.

## Agricultural Research

Over half the nation's research is carried out by the Department of Agriculture's Research Branch, which operates more than 50 establishments, from coast to coast and in the Yukon and Northwest Territories. Research projects include all elements of the food chain—soils, plants, animals, and plant and animal products—and associated micro-organisms, pests, and diseases, as well as food processing and storage.

The Animal Pathology Division of the Health of Animals Branch conducts research on animal and poultry diseases and provides extensive diagnostic services. The Research Division of the Economics Branch studies farm management, resource use, farm income, market structure, agricultural productivity, and changes in farm organization and markets. The Laboratory of the Board of Grain Commissioners for Canada undertakes research on the quality of cereal grains and oilseed crops.

### Recent Progress in Agriculture

Two federal government scientists have developed a method of turning poplar wood into a feed equal in energy to medium-quality hay. This could be a new use for waste from pulp and paper or plywood factories.

The speckled areas in this photograph taken near Hensall, Ont., show bacterial blight in beans.



A new process for producing powdered flavour essences from fruit has been developed at Summerland Research Station. Flavour and aroma are locked inside a coating of sugars; water works like a key to release them. This technique opens a new market for large volumes of apples and berries.

Fresh ready-to-eat milk puddings may soon be available beside milk and other dairy products in supermarkets, thanks to the Food Research Institute in Ottawa. This institute has also developed several new frozen egg and liquid milk products using liquid nitrogen. The frozen eggs look like popcorn and thaw quickly. A new food powder made from soybeans and skim milk powder or whey powder has also been developed in Ottawa. It could create a market for surplus skim milk powder and whey, and may find a market as a protein food in many parts of the world.

In August 1970 the four Atlantic Provinces were declared free of brucellosis and British Columbia followed a few months later. These are the first provinces to be declared brucellosis free since the federal-provincial eradication program was introduced in 1957. Brucellosis causes undulant fever in humans and abortion and decreased milk yields in cattle.

Several new varieties of plants developed by the Research Branch were announced recently: Mini-Rose, an early ripening pink cherry tomato; Totem, a high-yielding, large firm strawberry; Martin Frobisher, a winter-hardy pink shrub rose; Melrose, the first Canadian variety of sanfoin, a new forage crop; Trapper, a high-yielding field pea; and Kay, a high-yielding, winter-hardy variety of orchard grass.

## **The Fisheries Research Board of Canada**

Ancillary to the management and development function of the federal Department of Fisheries and Forestry is the Fisheries Research Board of Canada, the oldest government-supported independent scientific Board in North America. It is the lineal descendant of a government research organization founded in 1898 and dedicated to conducting basic and applied research on Canada's living aquatic resources, their environment, and their utilization.

One of the major current commitments of the Board is to extensive research in the field of water pollution. The centre of the Board's activity in this field is the Freshwater Institute in Winnipeg, where data from many of the Board's laboratories in other parts of the country are collated. In conjunction with this field of research, the Board has a unit in the Canada Centre for Inland Waters in Burlington, Ont., and works in close co-operation with the Department of Energy, Mines and Resources, which is engaged in other areas of the pollution problem.

The basic purpose of the Board is to increase the knowledge, scope, value, and efficiency of the Canadian fisheries and other aquatic resources through scientific research. From this research comes assurance that Canadians will have abundant supplies of fish, mammal and invertebrate, from the sea and lakes, and that these stocks will be expanded. To this end, the Board's scientists study the environment (including pollution), the resource (the availability, and abundance of fish and the effects of fishing), harvesting techniques, methods of increasing the resource and commercial products.





The Fisheries Research Board's Freshwater Institute has successfully introduced rainbow trout as a seasonal catch into small lakes in Manitoba that freeze over in the winter.

The Board's contributions to the development of new fisheries and to fish processing methods on both the Atlantic and Pacific coasts have contributed millions to the economy of the fishing industry. Its chilled sea-water research, for example, has been instrumental in saving untold dollars by preventing waste and by up-grading the quality standards of fish processing.

During 1969 the results were assessed of experiments on shallow Prairie lakes in which fingerling rainbow trout were introduced in the spring and marketable trout harvested in the fall. The lakes, which freeze to the bottom during winter and thus cannot support a permanent fish population, are rich in nutrients. By a put-and-take process, it is felt that a lucrative new type of fishery can be introduced on the Prairies, and initial experiments seem to verify the theory.

Board scientists have laid the basis for rational exploitation of our renewable aquatic resources. The introduction of rapid changes in the fisheries of Canada from relatively primitive fishing operations to integrated food industries have revolutionized the industry. The Board's contribution to the development of high quality fish meal and fish protein concentrates is world famous. The reputation of its scientists and of their work is second to none in the world of aquatic sciences.

A major contribution of the Board to the scientific development of Canada has been its interest in encouraging science-oriented young people in the fields of marine biology. Its programs of university grants and the inclusion of laboratory space for the use of graduate students in a number of the Board's ten stations from coast to coast has been generous.

## Forestry Research

Several agencies, both public and private, are engaged in researching various aspects of forestry. These include universities, provincial governments, pulp and paper companies, and the federal government.

The federal government, through the Canadian Forestry Service of the Department of the Environment, is the largest contributor to research in the forest with an annual budget of approximately \$25 million. The Service has laboratories strategically located across the country as well as a number of specialized institutes based mostly in Ottawa. Major current projects include studies on biological control (the use of viruses, parasites, and predators to control insect outbreaks), reforestation in clear-cut areas, forest hydrology, water pollution abatement, land classification for national parks, the likely ecological effects of development in the Canadian North, and the recreational values of a forest. Added to these of course are the Service's traditional research studies dealing with silviculture, fire, insects and disease, wood products, and so forth.



Modern equipment is used to collect seed cones from selected trees for purposes of reproduction.





A scientist studying the effect of temperature and light intensity on the growth of hemlock and Douglas fir seedlings.

Besides the federal forest research program, the provinces of Quebec, Manitoba, Ontario, and British Columbia maintain forest research organizations concerned mainly with solving problems related to fire protection, silviculture, soils, mensuration, and tree improvement; they rely upon the federal program for most studies in entomology, pathology, and forest products.

Within industry, the pulp and paper companies make the largest contribution to research. Most of these companies conduct research into pulping and paper technology and most are also sustaining members of the Pulp and Paper Research Institute of Canada, in Montreal. This Institute has large research programs in pulping and paper technology and lesser commitments to research in logging and silviculture. Lumber and plywood companies depend mainly on the federal forest products laboratories to meet their research needs.

Further research in forestry and allied fields is conducted at Canadian universities. Forestry faculties are located at the University of British Columbia in Vancouver; the University of Toronto; Laval University in Quebec City; and the University of New Brunswick in Fredericton. In co-operation with the Pulp and Paper Research Institute, McGill University in Montreal trains post-graduate students in fields of interest to the pulp and paper industry.



## Religion

In the summer of 1534 Jacques Cartier landed on the Gaspé coast and erected on a bold headland a wooden cross 30 feet high. He was staking a claim, not only for his nation, but for his faith. Since that time the history of Canada has been in inter-development — sometimes in conflict — of church and state.

A colourful and courageous episode of Canada's founding years was written by the Jesuit missionaries, of whom the martyr, Jean de Brébeuf, is one of the authentic national heroes of Canadians of all faiths. Under the leadership of Madame d'Youville, the Grey Nuns also (among other eminent nursing orders), at a time when even the most primitive medical help was wanting, wrote a story, now too little remembered, of extraordinary devotion and fortitude in outpost service as nursing sisters. With limitless dedication, the Grey Nuns, who, in effect, introduced district nursing into Canada, carried on their vocation of mercy amid dangers and privations now incredible.

In the early stages of English settlement, pioneer Protestant missionaries and clergymen also played a vital part in the building of Canada. The church was often the sustaining centre of community life. James Evans, a Methodist missionary,



invented Cree syllabics, and made it possible for Indians to read their own language and write it on birch bark. In the 19th century Egerton Ryerson, another Methodist minister, laid the foundation for a system of public education in Ontario. At the opening of the Prairies, John McDougall, yet another Methodist missionary, was the indispensable intermediary, trusted by the Indians, in formulating the treaty which averted war with the Western tribes. Beyond the Great Lakes, the pioneering saddle-bag clergymen share with the Royal Canadian Mounted Police the credit for the fact that Canada never had a "Wild West."

Canadian religious history has been marked by two distinctive features. The Roman Catholic story has been notable for the massive power and influence which the clergy established and maintained in French Canada. Protestant churches, at least those called elsewhere the Free Churches, showed from the first a tendency, which, in sparse, new pioneering communities was almost a necessity, to forget the traditional divisions of old lands and to create churches autonomous in Canada.

Thus Canada was the first country in which all the varied branches of Methodists united to form one Canadian Methodist church. Similarly all Congregationalists merged into one union. And even all Presbyterians, despite ancestral divisions, joined in a single Presbyterian church for all Canada. These three denominational unions, less a dissenting Presbyterian minority, then combined to form, in 1925, the United Church of Canada. This union was the first of its kind in Protestant history.

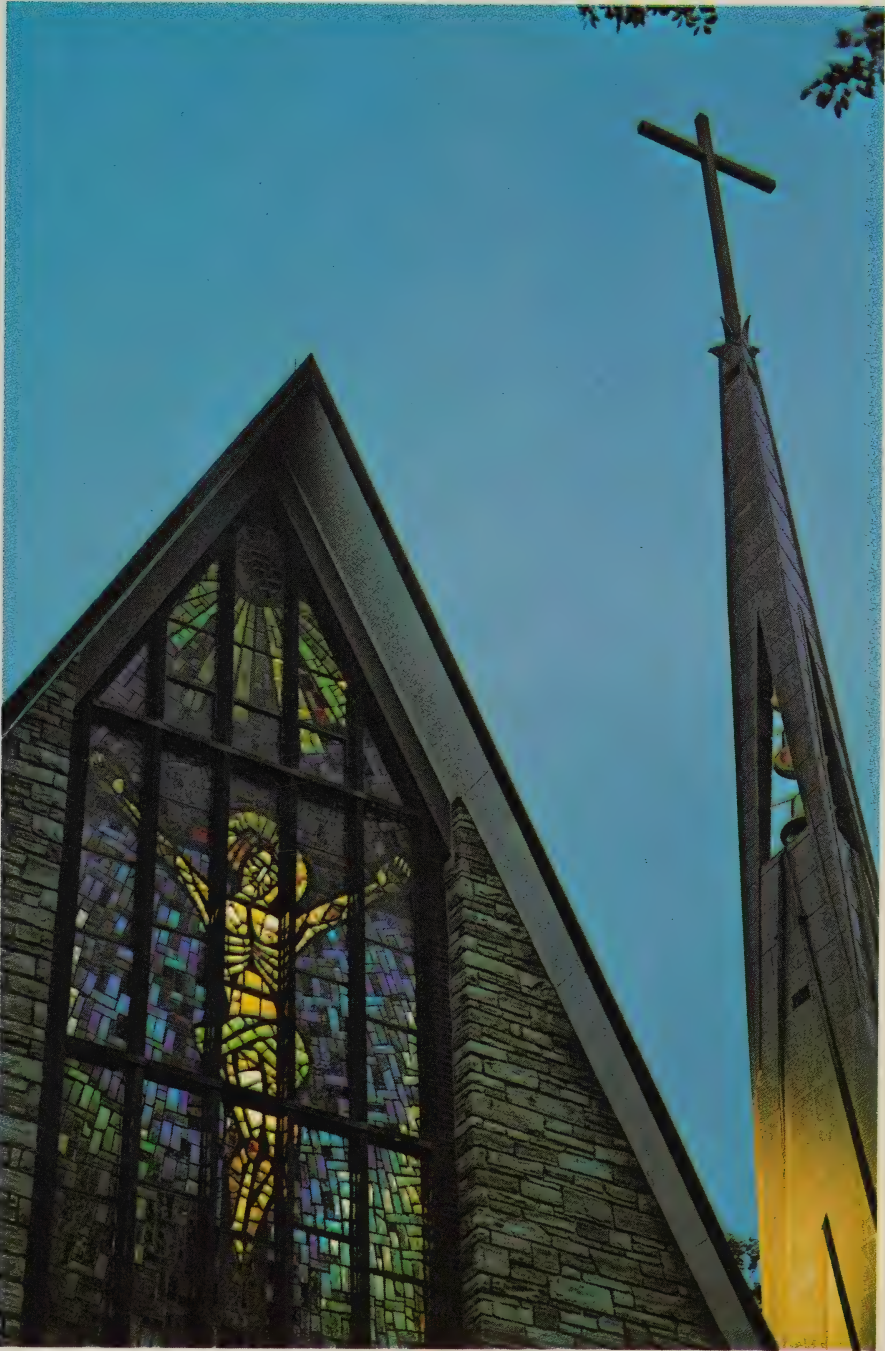
At the present time proposals are being studied for a further union between the United Church and the Anglican. Whether or not the proposals will result immediately in formal union, the two churches will certainly work together in unprecedented forms of co-operation.

These three churches, numerically in order, Roman Catholic, United Church, and Anglican, together include nearly 80 per cent of the population of Canada, according to the 1961 census. Other familiar denominations have substantial numbers of adherents. Presbyterians come first with upwards of 800,000, and Lutherans follow with upwards of 600,000. Baptists in Canada have not become as strong proportionately as they are in the United States. They are confined mainly to the Eastern half of the country, and are there divided into several conventions. Baptists have a constituency somewhere upward of half a million.

Like all free countries, Canada has many small denominations, some with a long history and a permanent place in the Canadian scene, and some recent in origin and local in setting. Quakers in Canada have been characteristically few in numbers, but, like the Mennonites, high in public esteem. Unitarians have been confined chiefly to central cities, but they have a membership with an impressive proportion of influential citizens.

In all parts of Canada groups, known in general designation as Evangelicals, have grown rapidly in recent years. Some of these consist only of individual churches. Of such organizations the Peoples Church in Toronto is the largest and the most vigorous. This single congregation, under the leadership of a remarkable evangelist, Oswald Smith, and later his son Paul, has grown to be almost a denomination in itself. The largest organized group of the Evangelicals is the Pentecostals who were listed in the 1961 census at fewer than 150,000.







Especially in the Western provinces, Canadians coming from branches of the Eastern Orthodox (Greek Catholic) churches have made their heritage visible in church buildings with spires in the distinctive onion-dome pattern of their homelands. They number approximately 200,000.

Recently the Coptic church of Egypt has established in Toronto—where it currently has about 1,000 members—headquarters from which it supervises Coptic congregations in Canada and the United States.

Among unusual religious communities in Canada are the Hutterites, a farming society, organized in communal groups, and having a strong family life. Though modern in farm techniques, they cling socially to ancient ways, but also to ancient virtues.

In recent years the distinguishing feature of Canadian religious life has been the new degree of cordiality and co-operation not only between the various Protestant churches but also between Protestants and Roman Catholics. Significantly, some of the first instances of the new spirit came from Quebec, where Roman Catholic clergymen invited their Protestant brethren to share with them in their cathedrals in joint services of worship. Roman Catholic and Protestant clergymen also co-operated in building the Christian Pavilion at Expo 67.

Aside from the Christians, the oldest, largest, and most influential religious community in Canada is that of Jews. Since the early history of Canada they have, though small in total percentage of population, made enormous contributions to Canadian life and culture. The separation of Christians and Jews has been broken, and more warm and understanding relationships have been cultivated by the establishment, in the early 1940's, of the organization called first the Canadian Conference, and later the Canadian Council of Christians and Jews. The Council has done much to establish contacts and to originate programs for the development of mutual understanding and appreciation. It has been the chief instrument in establishing Brotherhood Week as an institution in Canada.

Jews are not the only representatives in Canada of the world's great religions, other than Christianity. The metropolitan centres now have sizable and increasing groups of Muslims, Buddhists, Hindus, Sikhs (chiefly in British Columbia), and others.

Canada has not been without instances of bigotry and religious animosity, but on the whole Canadian history has been commendably free of violence springing from religious dispute. The nature of Canadian life—small communities struggling to establish themselves in a vast land—has provided its own need for co-operation in common ventures and its own sanctions for tolerance.

And tolerance has slowly moderated traditional distrust. Only in few areas now do the significant divisions in Canadian life follow religious lines. What in the beginning was merely truce has come to be something like genuine peace. And peace may bring to the Canada of the future a depth and breadth of mutual appreciation from which no one will be excluded. Canadians are not there yet; but they may be as near as any people in the world.

## Recreation

Sports—both participational and recreational—constitute an increasingly important part of life for most Canadians, and sporting activities also have a decided effect on the nation's tourist industry. During and since 1967, an impressive number of new, all-purpose sport complexes have radically altered the patterns of recreation in Canadian society—a society rapidly becoming urbanized and turning more and more to participational sports for the exercise once obtained in the workaday world.

This increasing need to get away from the pressures of the city has resulted in much more than hockey rinks and ski hills. Among the new, first-class facilities are cultural centres, parks, access roads, hotels and resorts, and newly-restored historic sites. All, in one way or another, permit Canadians, and tourists, to get away at least temporarily from the tensions of the city.

### Winter Recreation

A long, harsh winter has placed an indelible stamp on this country. But in recent years, there is unmistakable evidence that literally millions of Canadians have decided to enjoy the elements.

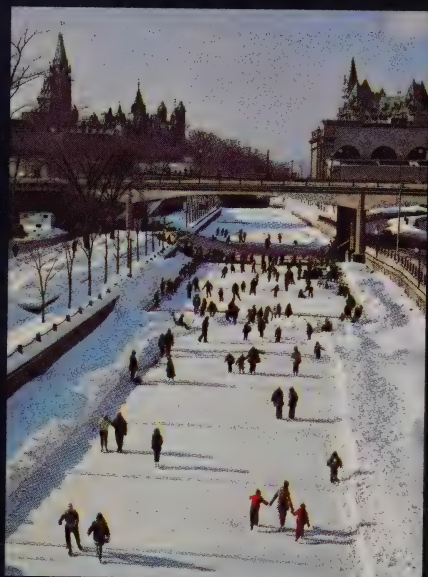
Winter outdoor recreation in general and alpine skiing in particular were consistently on the rise throughout the 1960's. Ski area development continued in



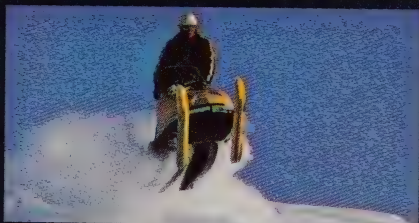
1. A recent innovation in Ottawa has been provided by the National Capital Commission: a section of the historic Rideau Canal has been prepared for ice-skaters. In the background are the Houses of Parliament (left) and the Chateau Laurier hotel.
2. In the past few years snowmobiling has become an increasingly popular sport.
3. The Scottish game of curling is enjoyed by many Canadians from coast to coast.
4. In the spring when the sap begins to flow in the maple trees, "sugaring-off" is the occasion for parties in the sugar bush.







1



2



3



4

1970, with six major new areas opened. A total of 32 lifts, including 10 double chairs were installed. The Province of Ontario led with 19 lifts and 3 of the 6 new areas. There are now indications of a renewed nation-wide interest in cross-country, or ski touring. Sales of Nordic ski equipment are estimated to have tripled in 1970.

Snowmobiles continued their phenomenal increase in popularity and their sales were up 25 per cent in 1970, when 140,000 units were sold in Canada. They are used for recreation, and for conveyance—especially in the rural areas. Most provinces have enacted laws and adopted terrain regulations to ensure that these vehicles are driven with care and accidents kept to a minimum.

The popularity of snowmobile racing has grown considerably, as indicated by the number of events scheduled for the current season.

Curling, a sport in which Canadians have excelled in international competition for a number of years, is becoming increasingly popular. Traditionally a rural or small-town sport, it has moved into the large urban centres, and is well on its way to becoming one of the most popular of Canada's winter activities.

## Summer Recreation

While the increasing urbanization of our society has radically altered the traditional patterns of winter activities, the same pressures have also produced a marked effect on the summertime habits of Canadians. One statistic dramatically illustrates a great need to escape the city: in 1970, 12.5 million people visited Canada's national parks, one million more than in 1969.

Fortunately, Canada is blessed with an abundance of open space and areas for recreation or just quiet enjoyment of nature. The national parks system now encompasses some 19 million acres, with 115 campgrounds. More and more areas are being set aside for preservation as national or provincial parks. In 1970, four new national park areas were chosen—one on Vancouver Island in British Columbia, La Mauricie and Forillon in Quebec, and Kouchibouguac in New Brunswick—and these are now being developed.

In addition, there are over 50 national historic parks and major sites in Canada and more will be added. Among these parks is the 18th century Fortress of Louisbourg on Cape Breton Island, possibly the world's most extensive historical reconstruction. There is Castle Hill, built in the 17th century to protect the first colony in Newfoundland at Placentia. Lower Fort Garry on the Red River in Manitoba has been restored and refurbished to illustrate life in the fur trade during the mid-1800's. In the northwest, the Klondike Gold Rush International Historic Park is being developed jointly by Canada and the United States. The most northerly historic park is Fort Prince of Wales on Hudson Bay, with walls 24 feet thick at their base. The most southerly historic park is Fort Malden at Amherstburg, Ont. Built in 1797-99, destroyed by Americans in 1813, and rebuilt in 1819-23, it recalls one of the few times that the border between Canada and the United States has been defended.

In addition there are 640 provincial parks and thousands of municipal and private campsites, which are constantly being added to, improved and expanded.



Prolific fish and game areas lure more sportsmen every year as new roads and fly-in services open up new regions to outfitters' camps and lodges. In 1970 the previous world record for giant tuna taken with rod and reel (997 pounds, boated off Cape Breton in 1953) was broken twice—once off Prince Edward Island and once off Nova Scotia at 1,040 and 1,065 pounds respectively. In the same year, the world's record arctic char, weighing 28 pounds, 2 ounces was caught at Tree River, Northwest Territories, topping the previous record set in 1963 by 12 ounces.

Containing literally millions of lakes and rivers and miles of ocean shoreline, Canada offers unlimited scope for water sports and recreation. Lakeside cottage construction is on the upswing and swimming, water-skiing, pleasure boating, and skin-diving continue to increase in popularity.

Yacht, sailboat, and powerboat races and swimming regattas multiply on inland and coastal waters and there is a new interest in wilderness canoeing, sparked by the 1967 Centennial Voyageur Canoe Pageant, and the efforts of the Canadian Camping Federation volunteers who mapped the navigable canoe routes of today.

An interest in hiking has been revived with the cutting of special hikers' trails in national and provincial parks and with the opening of Ontario's 480-mile long Bruce Trail from the Niagara Escarpment to the Bruce Peninsula. Some of the most breathtakingly beautiful hiking trails in the world are in western Canada, such as the international Chilkoot Trail (Skagway, Alaska, to Bennett, B.C.) made famous by the gold stampede of '98. The hiking trail systems of the Rocky Mountain national parks are unsurpassed for scenic beauty and proximity to wildlife species. They range from comfortable afternoon strolls with a stop-off for tea, to the international 500-mile Great Divide network through the Rocky Mountains, 360 miles of which are on the Canadian side of the border.

## Special Events

Canada has a year-round calendar of events with each season featuring its own special type of celebration. In late March and early April, sugaring parties are popular in eastern Canadian maple bushes. Spring is the time for blossom festivals, such as the ones held in Ontario's Niagara area, the Annapolis Valley in Nova Scotia, the Okanagan Valley of British Columbia, and Ottawa, which is famous for its tulip festival.

Summer brings exhibitions, fairs, and festivals. Montreal's "Man and His World," held on the site of Expo 67, and offering the same visual scope, is now a permanent summer exhibition. Other well-known summer events include Edmonton's Klondike Days and the Calgary Stampede and Exhibition, both in Alberta, the Vancouver Festival of the Sea, in British Columbia, and Maritime celebrations like the Nova Scotia Fisheries Exhibition and Fishermen's Reunion, in Lunenburg.

Fall fairs are still important in many regions of Canada. They range from local fairs in thousands of small communities, to the Canadian National Exhibition in Toronto.

Winter gives rise to a series of carnivals across the country. Most feature sports competitions—skiing, curling, dog-sledding, snowmobiling, hockey, and ice-fishing. Some of the most popular carnivals are the Quebec Winter Carnival, at Quebec City, the *Festival des Neiges* at Ste-Agathe-des-Monts, Que., the Trapper's Festival at The Pas, Man., and the Vernon Winter Carnival in British Columbia.



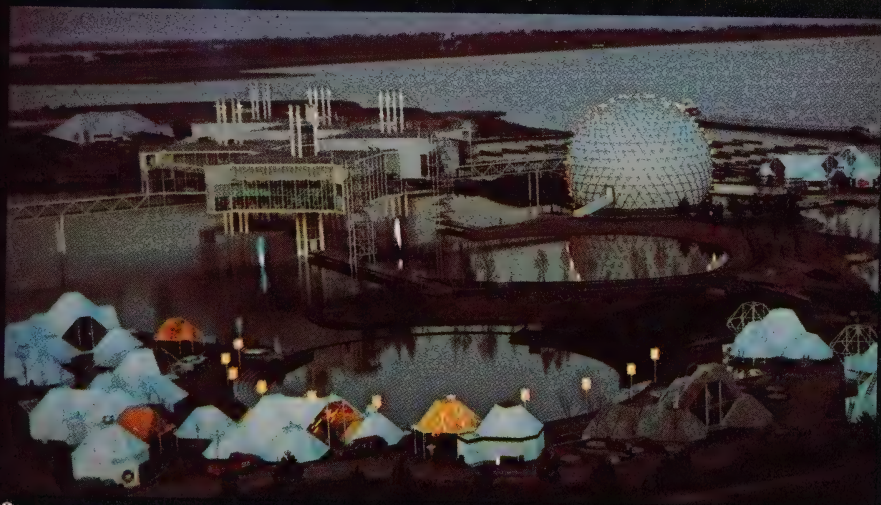
1. Many rivers, such as this in Laurentides Park, Que., provide fine trout fishing.
2. The gay 90's are recalled at the Kenora Carnival in northern Ontario.
3. A view at dusk of Toronto's newly completed Ontario Place. This pleasure ground gives the residents of Toronto the advantages of a summer-long fair.
4. The Calgary Stampede is world-famous. Cowboys riding wild steers provide much of the excitement.
5. Marinas abound on Canada's west coast. Here boats are docked in Deep Cove on Indian Arm, near Vancouver, B.C.



1



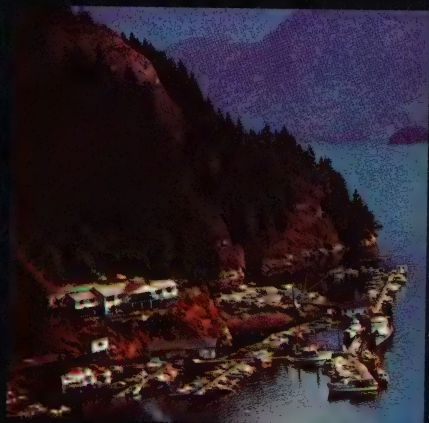
2



3



4



5

## Population

The population of the world was estimated at 3,483 millions in mid-1969. North America contributed 309 millions or 8.3 per cent and Canada's share was 21.1 million or 0.6 per cent. However, this population occupied 7.3 per cent of the land area of the world. The distribution of the Canadian population and its pattern of growth are very interesting. The provincial and rural-urban distribution, the sex-age-marital status patterns, and the components of growth are discussed in the following paragraphs.

The estimated population of Canada on June 1, 1970, was 21,377,000. This was an increase of 3,139,000 since the 1961 census and of 1,362,000 since the 1966 census. This growth has been distributed very unevenly among the provinces; only three have seen their share of the total population enlarged. In 1961, out of every 100 persons in Canada 34.2 lived in Ontario, 8.9 in British Columbia, and 7.3 in Alberta. By 1970, these proportions had increased to 35.7 in Ontario, 10 in British Columbia and 7.5 in Alberta, while Quebec's share had dropped from 28.8 to 28.1, the Atlantic Provinces from 10.4 to 9.4, Manitoba from 5.1 to 4.6 and Saskatchewan from 5.1 to 4.4.

**Numerical and Percentage Distribution of Population by Province**

Province or Territory	Population in thousands			Percentage distribution		
	1961 census	1966 census	1970 (Estimated)	1961	1966	1970
<b>Canada</b> . . . . .	<b>18,238</b>	<b>20,015</b>	<b>21,377</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Newfoundland . . . . .	458	493	518	2.5	2.5	2.4
Prince Edward Island . . . . .	105	109	110	0.6	0.5	0.5
Nova Scotia . . . . .	737	756	766	4.0	3.8	3.6
New Brunswick . . . . .	598	617	624	3.3	3.1	2.9
Quebec . . . . .	5,259	5,781	6,013	28.8	28.9	28.1
Ontario . . . . .	6,236	6,961	7,637	34.2	34.8	35.7
Manitoba . . . . .	922	963	981	5.1	4.8	4.6
Saskatchewan . . . . .	925	955	942	5.1	4.8	4.4
Alberta . . . . .	1,332	1,463	1,600	7.3	7.3	7.5
British Columbia . . . . .	1,629	1,874	2,137	8.9	9.3	10.0
Yukon Territory . . . . .	15	14	16	0.1	0.1	0.1
Northwest Territories . . . . .	23	29	33	0.1	0.1	0.2

The growth in the Canadian population during the decade beginning in 1960 has been associated with a significant increase in the population living in urban centres. According to the 1961 census about 11.2 million or 62 per cent of all Canadians lived in urban centres having populations of 5,000 and over; by 1966 this section of the population had risen to 65 per cent or about 13 million. There were 325 urban centres with a population of 5,000 and over in 1966 and only 306 at the time of the 1961 census. A total of 40 cities registered populations of 50,000 or more at the time of the 1966 census; there were only 29 such cities in 1961.

The urban development is typified by the growth of the 19 census metropolitan areas of Canada, whose population had increased by 15 per cent between 1961





The residents of St. Faustin, Que., could be classed as rural non-farm persons.

and 1966, while that of the remainder of Canada increased only 5 per cent. At the 1966 census they contained 9,633,000 persons or 48.1 per cent of the total population of Canada and by June 1, 1970, they had grown to 10,447,000 or 48.9 per cent.

Continued population gains in urban areas at the expense of rural areas are shown in the 1966 census: whereas 69.6 and 30.4 per cent of Canada's total population lived in urban and rural areas respectively in 1961, the proportion had changed to 73.6 and 26.4 per cent by 1966. (The definition of the urban areas covered all cities, towns of 1,000 population and over, whether incorporated or not, as well as the urbanized fringes of cities of 10,000 population and over. The remainder of the population is classed as rural.) The rural population is further subdivided into those living on census farms (farms of one acre or larger with annual sales of \$50 or more) and those who belong to the rural non-farm population. Between 1961 and 1966, there was a decline of about a quarter of a million or 4.5 per cent in the rural population. Most of this decline occurred in the rural farm section which declined by about 159,000. During the same period the urban segment of the population increased by more than 2 million or 16 per cent. More than half of this gain occurred in cities of 500,000 and over.

There was a wide variation in the degree of urbanization of the provinces in 1966, as may be observed in the accompanying table.

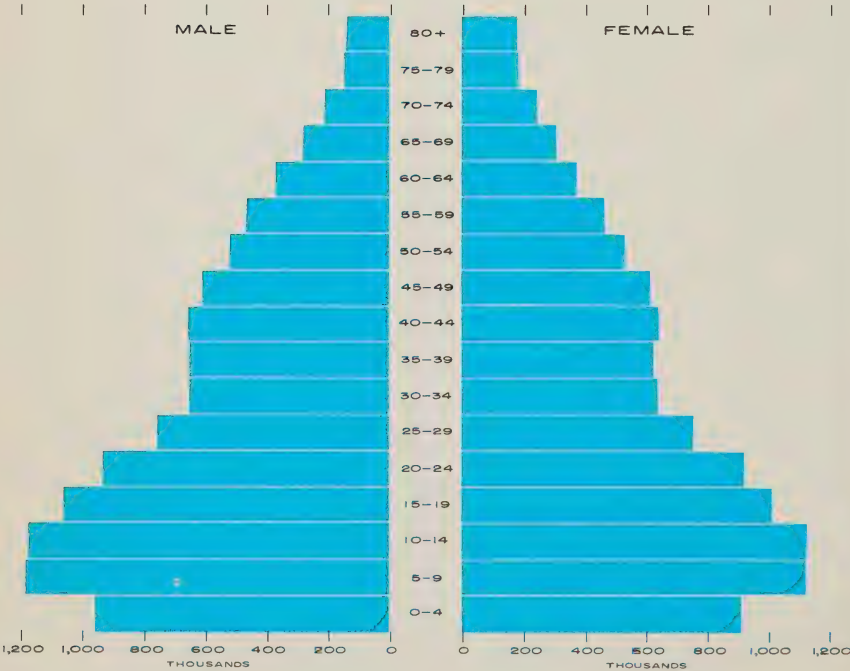
Rural and Urban Population, Canada and Provinces, 1966

Province or Territory	Total Population	Rural	Urban <sup>1</sup>
<b>Canada</b>	<b>20,014,880</b>	<b>5,288,121</b>	<b>14,726,759</b>
Newfoundland . . . . .	493,396	226,707	266,689
Prince Edward Island . . . . .	108,535	68,788	39,747
Nova Scotia . . . . .	756,039	317,132	438,907
New Brunswick . . . . .	616,788	304,563	312,225
Quebec . . . . .	5,780,845	1,255,731	4,525,114
Ontario . . . . .	6,960,870	1,367,430	5,593,440
Manitoba . . . . .	963,066	317,018	646,048
Saskatchewan . . . . .	955,344	487,017	468,327
Alberta . . . . .	1,463,203	455,796	1,007,407
British Columbia . . . . .	1,873,674	463,181	1,410,493
Yukon Territory . . . . .	14,382	7,554	6,828
Northwest Territories . . . . .	28,738	17,204	11,534

<sup>1</sup>Includes persons living in centres of 1,000 and more.

The distribution of population by sex and by province in 1961, 1966, and 1970 shows some significant changes. Over the years the number of males per thousand

Age and Sex Distribution of Population (Estimated), 1970



females has been declining. By 1970, females in two provinces outnumbered males; Quebec had 991 males per 1,000 females, while Ontario had 997 males per 1,000 females. In two provinces, Prince Edward Island and New Brunswick, there was an equal distribution. In the two territories there were considerably more males than females. In all the other provinces the sex ratio was gradually shifting toward an increasing proportion of women. For all Canada in 1970, there were an estimated 1,005 males per 1,000 females; in 1961, this had been 1,022 males per 1,000 females.

The distribution of population by age in 1961, 1966, and 1970 indicates that the proportion under 15 is steadily declining. In 1961 the population under 15 constituted 33.9 per cent of the total and 32.9 and 30.3 respectively in 1966 and 1970. At the same time, the population in the labour force age group (15 to 64) has proportionately increased from 58.4 per cent in 1961 to 59.4 and 61.9 per cent respectively in 1966 and 1970. The proportion of population aged 65 and over, however, has remained fairly constant at about 7.7 per cent.

The preceding chart shows the age and sex pyramid for the 1970 estimated population for the whole of Canada. It may be remarked that the numbers in age group 0-4 have diminished significantly in recent years and the pyramid stands on a narrower base. This situation will have appreciable effects on the numbers entering school and the work force in the future. Another feature of interest in the population profile is the large number in the school and university age groups: a continuation of crowded class rooms, increased numbers entering the labour force, increased numbers of marriages and perhaps a reversal of the decreasing numbers of births are likely results. The smaller numbers in the age group between 25 and 45 are attributable to low birth rates during the depression and World War II.

The components of population change (for the nation as a whole) are births, deaths, immigration, and emigration. The following table shows the number of births, deaths, immigrants, and emigrants during the periods July 1961-June 1966 and July 1966-June 1970.

### Components of Population Change for Canada, 1961-66 and 1966-70

(Figures in thousands)

Census population		Births	Deaths	Immigrants	Emigrants	Population at end of period
1961 = 18,238		During the period 1961-66				
	Total number	2,249	731	539	280	20,015
	Average per year	450	146	108	56	
	1966 = 20,015		During the period 1966-70			
Total number		1,483	612	752	261	21,377
Average per year		371	153	163	65	



On June 1, 1969, the estimated number of families in Canada—excluding the Yukon and the Northwest Territories—was 4,807,000, an increase of 289,000 or 6.4 per cent since the 1966 census, and of 667,000 or 16.1 per cent since the 1961 census. The average number of persons per family in Canada on June 1, 1969, was 3.9, the same as in the 1961 and 1966 censuses. The population living in families constituted 88.4 per cent of the total population of Canada on June 1, 1969. The average family was largest in the Atlantic Provinces at 4.2 persons, followed by Quebec at 4.1 persons, the Prairie Provinces at 3.8 persons, and Ontario at 3.7, while British Columbia had the smallest average sized family—3.6 persons.

In June 1969 the average number of children in a family remained unchanged from the 1961 and 1966 censuses, at 1.9. It should be mentioned that by children in a family is meant the number of unmarried children, under 25 years of age, living at home.

The combined number of families with no children (accounting for 29.2 per cent of all families), or with only one child showed a slight increase at 48.9 per cent as compared with 48.4 per cent at the 1966 census and a small decrease from the 49.6 per cent of all families as shown at the 1961 census. By contrast, families with three or four children—22.2 per cent of all families in June 1968—showed increases over the 1966 census figure of 21.9 per cent and the 1961 census figure of 20.9 per cent. Families with five or more children in 1969 accounted for 8.4 per cent of all families in Canada; in the 1966 census they accounted for 9.2 per cent.

The 1969 estimates of the number of children in a family show marked differences from region to region. Families with no children, for example, were only 26.2 per cent of all families in Quebec and 26.5 in the Atlantic Provinces, but constituted 29.9 per cent in Ontario, 31.7 per cent in the Prairie Provinces, and 32.5 per cent of the total in British Columbia. On the other hand, families with five or more children accounted for 13.1 per cent of all families in the Atlantic Provinces, 12.1 per cent in Quebec, 6.8 per cent in the Prairie Provinces, and 6.1 per cent and 5.0 per cent respectively, in Ontario and British Columbia.

According to the 1969 family estimates for Canada 28.7 per cent of the heads of "normal" families, that is, families with both husband and wife living at home, were under 35 years of age, 24.5 per cent were between 35 and 44 years, 20.9 per cent between 45 and 54 years, 15.0 per cent between 55 and 64 years, and 10.9 per cent over 65 years of age.

### Population 15 Years and Over by Marital Status, 1956, 1961, 1966

Marital status	Numerical distribution			Percentage distribution			Percentage increase
	1956	1961	1966	1956	1961	1966	
Population 15 and over . . . . .	10,855,581	12,046,325	13,423,123	100.0	100.0	100.0	11.4
Single . . . . .	2,960,929	3,191,206	3,764,833	27.3	26.5	28.0	18.0
Married . . . . .	7,146,673	8,024,304	8,723,217	65.8	66.6	65.0	8.7
Widowed . . . . .	711,211	778,223	870,297	6.6	6.5	6.5	11.8
Divorced . . . . .	36,768	52,592	64,776	0.3	0.4	0.5	23.2

Canada's single population 15 years of age and over increased by 18 per cent in the 1961-66 period but only by 8 per cent in 1956-61 and by 5 per cent in 1951-56. The marked increase in the single adult population is mainly the result of a substantially larger number of persons in the young adult ages who were born in the postwar period when the birth rate was high. In contrast, the married population increased by 8.7 per cent between 1961 and 1966; the gain in the previous five-year period was 12.3 per cent. The combined widowed and divorced population increased to 12.5 per cent in 1961-66; it was 11.1 per cent between 1956 and 1961.

Provincially, the largest proportion of single people in the adult population lived in the Northwest Territories and Quebec, 33.3 per cent and 33.1 per cent respectively; the smallest proportion was in British Columbia, 24.6 per cent. Ontario showed the largest percentage of its population 15 years of age and over to be married, 67.6 per cent, while Prince Edward Island showed the smallest, 60.5 per cent. British Columbia, with 8.4 per cent, had proportionally more widowed and divorced persons than other provinces while the smallest proportions were recorded in the Yukon and the Northwest Territories, 4.9 per cent in each, and in Quebec, 5.8 per cent.

Both young and old turn out every year for the 40-mile Miles for Millions walk to raise money for worthy causes.





## Bilingualism

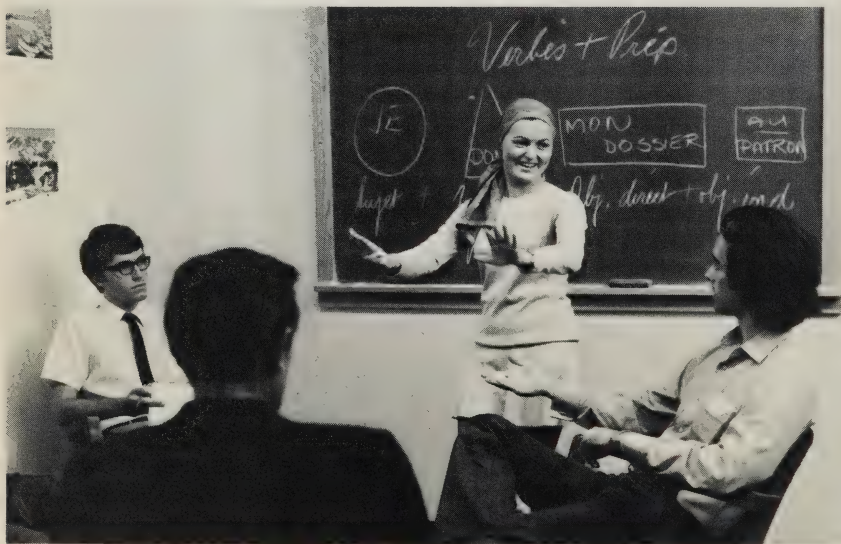
Throughout Canada's history, the existence of two major linguistic groups has been one of the dynamic forces which has shaped the country and has contributed much to its unique character. To safeguard this valuable national heritage, the federal government has taken a number of steps to ensure the equal participation of both English-speaking and French-speaking Canadians in Canada's future.

In 1963, it appointed a Royal Commission on Bilingualism and Biculturalism whose purpose was to enquire into a wide range of questions relating to language and culture in Canada. Following the publication of the first volume of the Commission's Report, the Government introduced an Official Languages Bill in the House of Commons in October 1968. After careful study and discussion the final version of the Bill was unanimously adopted in July 1969 and came into force in September of the same year.

Section 2 of the Official Languages Act stipulates that "the English and French languages are the official languages of Canada" and that they "possess and enjoy equality of status and equal rights and privileges as to their use in all the institutions of the Parliament and Government of Canada."

In addition, the Act contains three main sections. First, a number of clauses ensure that all public documents issued by any federal authority are produced in English and French. Second, the Act specifies that "bilingual districts" will be created. In these districts, and in certain other situations, federal government services will be available to the public in both official languages. Finally, the Act

In the federal civil service during 1971-72, 1,350 persons were studying English and 7,650 were studying French.





outlines the responsibilities of a Commissioner of Official Languages whose job it is to ensure compliance with the spirit and the intent of the Act.

In consideration of Section 2, "it is the duty of the Commissioner to take all actions and measures within his authority with a view to ensuring recognition of the status of each of the official languages and compliance with the spirit and intent of this...Act in the administration of the affairs of the institutions of the Parliament and Government of Canada and, for that purpose, to conduct and carry out investigations either on his own initiative or pursuant to any complaint made to him and to report and make recommendations with respect thereto as provided in this...Act" (Section 25).

It follows from this section that the Commissioner exercises two basic functions, those of language ombudsman and linguistic auditor general. It should be noted that his powers can only be brought to bear in matters of federal jurisdiction. The Commissioner is appointed by Parliament for seven years and is eligible to be re-appointed for further terms not exceeding seven years. He is required to submit an annual report to Parliament on his activities during the preceding year.

In order to develop and implement its official languages program, the Government created the Bilingualism Development Program within the Department of the Secretary of State. Responsibility for different aspects of the Bilingualism Development Program has been divided among four branches.

**The Languages Administration Branch** is responsible for bilingualism programs undertaken jointly with the provinces. The primary activity in this area to date has been the development of a program to provide grants to help finance both schooling in the minority language and second language instruction. The Branch also helps organizations in the private sector that request advice or assistance on matters pertaining to bilingualism and co-operates with other interested agencies to help develop the bilingual character of the National Capital Region.

**The Bilingualism Programmes Branch** works in close co-operation with the Treasury Board and the Public Service Commission in the development and co-ordination of bilingualism policy as it affects the public services. Its functions also involve the provision of assistance to departments and agencies on matters pertaining to bilingualism. In addition, it is responsible for liaison with the Bilingual Districts Advisory Board.

**The Social Action Branch** is responsible for the development of a grants program with two major objectives: to promote greater understanding between the two major linguistic groups and better appreciation on the part of all Canadians of the bilingual character of Canadian society; and to reinforce and promote the linguistic and cultural development of official-language communities in areas where they are established as minorities.

Through this series of programs, the Government hopes to ensure equality of opportunity for both French-speaking and English-speaking Canadians in the life of the nation. It also hopes to preserve and strengthen a Canadian society encompassing two languages and many cultural traditions.

## Immigration

Immigration has profoundly affected Canada's postwar growth and prosperity. Between the beginning of 1946 and the end of 1969, 3,267,144 immigrants arrived in Canada, who made up 20 per cent of Canada's population growth during that period. Approximately one Canadian in seven is a postwar immigrant.

Peak years for immigration since the war were 1957, when 282,164 persons were received, and 1967, when 222,876 were admitted. But there has been a steady flow of immigrants. In 1969, 161,531 settled in Canada, and in 1970, 147,713 were admitted.

Since Confederation almost 10 million immigrants have come to Canada and on January 1, 1971, the number of Canadian residents born outside the country was well over 3 million.

During 1969, the last full year for which statistics are available, immigrants from Britain and Ireland represented 20.6 per cent of the total. Other large groups were from the United States (14.1 per cent), the West Indies (8.1 per cent), Italy (6.4 per cent), China (5.1 per cent), Portugal (4.4 per cent), Greece (4.3 per cent), Germany (3.6 per cent), France (3.4 per cent), and India (3.3 per cent).

Canada's labour force during 1969 was augmented by 84,349 immigrant workers. Of these, 27.8 per cent were classed in the manufacturing, mechanical, or construction trades and 34.9 per cent in the professional or managerial categories. Labouring groups made up 2.4 per cent, and 2.7 per cent were classed as agricultural workers. Early figures for 1970 indicate that the numbers of skilled and professional immigrants continue to be high while the numbers of semi-skilled and unskilled immigrants are declining.

Postwar immigration figures based on the years 1946-69 inclusive show the following settlement of immigrants by areas: Ontario 52.6 per cent, Quebec 20.5 per cent, the Prairies 13.3 per cent, British Columbia 10.7 per cent, the Atlantic Provinces 2.7 per cent, the Northwest Territories 0.1 per cent, and unspecified 0.1 per cent.

An Assisted Passage Loan plan was introduced in 1951 to help those who might not be able to come to Canada because of financial circumstances. Up to the end of 1970, 308,423 persons had received assistance, and a total of \$55,873,229 had been advanced; most of it was repaid. In 1970 itself, 2,982 persons were granted loans totalling \$1,037,923.

On October 1, 1967, new immigration regulations came into effect, and the principles governing the selection of immigrants were spelled out in detail. An assessment system permits immigration officers to apply the same standards in the same way to potential immigrants from all areas of the world. The regulations formally confirm that Canadian citizens or permanent residents of Canada are entitled to bring their dependents to Canada; the privilege of citizens or permanent residents in applying for more distant relatives to come to Canada is extended to all areas of the world as new classes of relatives become eligible.

By linking selection standards to conditions within Canada, the new regulations seek to ensure a flow of immigrants suited to the economic and manpower requirements of this country. They make a clear distinction between dependents



Since Confederation almost 10 million immigrants have come to Canada.

and relatives entering the work force. There are three categories of immigrants: "sponsored dependents," "nominated (non-dependent) relatives," and "independent applicants," who are neither sponsored nor nominated.

Sponsored dependents are admitted to Canada provided they are in good health and of good character. Independent applicants must meet certain standards under an assessment system based on education and training, pre-arranged employment, personal assessment, occupational demand, occupational skill, age, knowledge of French or English, relatives in Canada, and employment opportunities in the area of destination.

Canadian immigration offices—or the services of an immigration officer—are maintained in Australia, Austria, Belgium, Britain, Denmark, Egypt, France, Germany, Greece, Hong Kong, Hungary, India, Ireland, Israel, Italy, Jamaica, Japan, Lebanon, the Netherlands, Pakistan, the Philippines, Portugal, Spain, Sweden, Switzerland, Trinidad, the United States, and Yugoslavia. In other countries the Department of External Affairs, through its missions (or through British diplomatic or consular offices) takes care of the interests of Canadian immigration.



# governments and their services

governments and their services

governments and their services

governments and their services

governments and their services

governments and their services

governments and their services

governments and their services

governments and their services

governments and their services

governments and their services

## Government

Canada is a federal state, established in 1867. In that year, the British Parliament, at the request of three separate colonies (Canada, Nova Scotia, and New Brunswick), passed the British North America Act, which "federally united" the three "to form ... one Dominion under the name of Canada." The Act merely embodied, with one modification (providing for the appointment of extra Senators to break a deadlock between the two Houses of Parliament) the decisions which delegates from the colonies, the "Fathers of Confederation," had themselves arrived at.

The Act divided the Dominion into four provinces. The pre-Confederation "province of Canada" became the provinces of Ontario and Quebec; Nova Scotia and New Brunswick retained their former limits. In 1870, the Parliament of Canada created Manitoba; in 1871, British Columbia entered the Union, and in 1873 Prince Edward Island. In 1905, the Parliament of Canada created Saskatchewan and Alberta, and in 1949 Newfoundland came in.

The B.N.A. Act gave Canada complete internal self-government, and gradually the country acquired full control over its external affairs also. It is now a fully sovereign state, except that a few (but very important) parts of its Constitution can be

changed only by Act of the British Parliament. This limitation, however, is purely nominal. The British Parliament invariably passes any amendment requested by the Canadian. The only reason the full power of amendment has not been transferred to Canada is that Canadians have not been able to agree on any amending formula.

The B.N.A. Act gave the Canadian Parliament power to "make laws for the peace, order and good government of Canada in relation to all matters ... not ... assigned exclusively to the Legislatures of the provinces." To make assurance doubly sure, the Act added a list of examples of this general power. These included defence; raising money by any kind of taxation; regulation of trade and commerce; navigation and shipping; fisheries; money and banking; bankruptcy and insolvency; interest; patents and copyrights; marriage and divorce; criminal law and criminal procedure; penitentiaries; interprovincial and international steamships, ferries, railways, canals and telegraphs; and any "works" declared by Parliament to be "for the general advantage of Canada." Amendments have added unemployment insurance, and power to amend the Constitution except in regard to the division of powers between Parliament and the provincial Legislatures, the rights guaranteed to the English and French languages, the constitutional rights of certain religious denominations in education, the requirement of an annual session of Parliament, and the maximum duration of Parliament.

The Act of 1867 gave Parliament and the provincial Legislatures concurrent power over agriculture and immigration (with the national law prevailing over the provincial in case of conflict); and amendments provided for concurrent jurisdiction over pensions (but with provincial law prevailing in case of conflict).

Decisions by the Judicial Committee of the British Privy Council (the final court of appeal for Canada until 1949) made the examples of the "peace, order and good government" power almost swallow up the general power of which they were supposed to be examples. The general power came to mean little more than jurisdiction to pass temporary laws to meet wartime emergencies. But judicial decisions also interpreted Parliament's powers to cover interprovincial and international telephones and interprovincial and international highway traffic, and all air navigation and broadcasting.

The B.N.A. Act established a limited official bilingualism. In debates in both Houses of Parliament, members may use either English or French; the records and journals of both Houses must be kept in both languages; Acts of Parliament must be published in both; and either language may be used in any pleading or process in courts set up by Parliament. The same provisions apply to the legislature and courts of Quebec.

In fact, the Government and Parliament of Canada, and the Governments and Legislatures of Quebec, Ontario, New Brunswick, and Newfoundland, have extended bilingualism beyond the constitutional requirements. The whole of the central administration at the national capital, and anywhere where there is a sufficient French-speaking or English-speaking minority, is now being thoroughly bilingualized. In 1969, Parliament adopted the Official Languages Act which declared that English and French enjoy equal status and are the official languages of Canada for all purposes of the Parliament and Government of Canada. The same



In June 1971 the heads of the federal and the provincial governments met in Victoria, B.C. to discuss the revision of the Constitution.



thing is happening in New Brunswick. Quebec has long been fully bilingual, both officially and in fact.

Except for limited official bilingualism, and certain educational rights for some religious minorities, the Canadian Constitution provides no specific protection for basic rights like freedom of worship, of the press, and of assembly. Such rights are protected by the ordinary law; but all of them could be curtailed or abolished by Parliament or the provincial Legislatures. Such action would be contrary to the Canadian tradition, however. Indeed, in 1960 the Parliament of Canada adopted a Bill of Rights and the present Government has proposed a constitutional Charter of Human Rights, placing such rights beyond the power of either Parliament or the Legislatures.

Each provincial Legislature has exclusive power over the amendment of the provincial Constitution (except as regards the office of Lieutenant-Governor, the legal head of the provincial executive): natural resources; direct taxation for provincial purposes; prisons; hospitals, asylums and charities; municipal institutions; licences for provincial or municipal revenue; local works and undertakings, incorporation of provincial companies; solemnization of marriage; property and civil rights; the administration of justice (including the establishment of courts, civil and criminal, and civil procedure); matters of a merely local or private nature; and education, subject to certain safeguards for denominational schools in Newfoundland and Protestant or Roman Catholic schools in the other provinces.

Judicial decisions have given "property and civil rights" a very wide scope, including most labour legislation and much of social security.

### **The Canadian Constitution**

The B.N.A. Act and amendments form the basic law of the Canadian Constitution. But they provide only a skeleton framework of government. This is filled out by judicial interpretation, by various Acts of Parliament and the Legislatures, and, most of all, by custom or "convention": the generally accepted understandings about how the legal machinery should be worked. A person taking the B.N.A. Act literally would think Canada was governed by an absolute monarch. In fact, the monarch's powers are exercised, as the Fathers of Confederation put it, "according to the well understood principles of the British Constitution"; that is, according to the usages and understandings which gradually transformed the British monarchy into a parliamentary democracy. These conventions Canada has inherited and adapted to suit her own needs.

### **The Government of Canada**

**The Executive.** By free and deliberate choice of the Fathers of Confederation, Canada is a constitutional monarchy. The executive government "is vested in the

Her Majesty the Queen, accompanied by Prince Philip and Princess Anne, visited British Columbia to celebrate the centennial of British Columbia's joining Confederation.



The Governor-General the Rt. Hon. Roland Michener and Mrs. Michener in the garden of Rideau Hall, Ottawa.



Queen" of Canada (who is also Queen of Britain, Australia, New Zealand, and Ceylon). In strict law, her powers are very great. In fact, they are exercised on the advice of a Cabinet responsible to the House of Commons which is elected by the people.

For most purposes, the Queen is represented by the Governor-General (now always a Canadian), whom she appoints, on the advice of the Canadian Cabinet, for a period of, normally, five to seven years. In very extraordinary circumstances, the Governor-General may act on his own. For instance, if the Prime Minister dies, the Governor must choose a new one from the party with a majority in Parliament, to hold office till that party can choose a new leader. Again, if a Cabinet came out of an election with less than half the seats in Parliament, and asked for an immediate fresh election, the Governor-General would have to refuse, since a newly elected Parliament must at least be allowed to meet and try to transact public business.

Except in such extraordinary circumstances, however, the Queen or the Governor-General must act on the advice of the Cabinet, or, in a few cases, of its head,





The Prime Minister of Canada, the Rt. Hon. Pierre Elliott Trudeau, chats with Jean-Marc Léger, the Secretary General of the Agency for Cultural and Technical Co-operation among French-speaking countries.

the Prime Minister. The Prime Minister appoints the members of the Cabinet, decides when Parliament shall meet; normally decides when a new Parliament shall be elected (though there must be an election at least every five years, unless war, invasion, or rebellion makes it impossible). The Cabinet appoints the members of the Senate (the Upper House of Parliament), the judges of the superior, district, and county courts, and the Lieutenant-Governors of the provinces. It can annul any provincial law within one year of its passing. It commands the armed forces, appoints public servants, pardons criminals, declares war, makes peace, appoints ambassadors, makes and ratifies treaties, and makes regulations within the limits set by Acts of Parliament.

The Cabinet is unknown to the law, the Prime Minister very nearly so. The B.N.A. Act provides only for a "Queen's Privy Council for Canada," appointed by the Governor-General to "aid and advise" him. In fact, this body does nothing. It consists of all Cabinet Ministers, all former Ministers, ex-Speakers of both Houses, the Chief Justice, ex-Chief Justices, and various distinguished citizens appointed as a mark of honour. Its only practical importance is that it provides the legal basis for the Cabinet, which, legally, is simply "the Committee of the Privy Council."

The Cabinet consists of those Privy Councillors whom the Prime Minister invites to its meetings. In practice, this means the heads of all departments, and usually also a few ministers "without portfolio," that is, without departments. In

April 1970, the Cabinet had 30 members: the Prime Minister, 24 heads of departments, and 5 ministers, without portfolio. Usually, there is one Senator without portfolio. By custom, all ministers must have a seat in one House or the other, or get one within a reasonable time.

The Cabinet has no fixed term. It holds office till the Prime Minister dies or resigns. Sir Wilfrid Laurier's Cabinet lasted for over 15 years, Sir John A. Macdonald's second Cabinet for almost 13.

If an opposition party wins more than half the seats at a general election, the Cabinet resigns, and the Governor-General calls on the leader of the victorious party to become Prime Minister. The new Prime Minister chooses his Cabinet from his own party: at least one minister from every province (except, usually, Prince Edward Island), and normally eight to ten each from Ontario and Quebec, six to eight from the Western Provinces, at least one English-speaking Protestant from Quebec, at least one French-speaking minister from outside Quebec, and at least one Irish Roman Catholic.

The Cabinet must speak as one on all questions of Government policy. A minister who cannot support that policy must resign. Each minister of a department is answerable to the House of Commons for that department, and the whole Cabinet is answerable to the House for Government policy and administration generally. If the Cabinet is defeated in the House on a motion of want of confidence, it must either resign office—when the Governor-General will call on the Leader of the Opposition to form a new Cabinet—or advise a fresh election—generally the latter nowadays.

Defeat of a major Government bill will ordinarily be considered a vote of want of confidence and lead to the same consequences. But the Cabinet can choose to consider any such defeat not decisive. It is then open to the House to vote straight want of confidence.

Only the Cabinet can introduce bills for the raising or spending of public money. Ordinary members of the House of Commons can move to reduce proposed taxes or expenditures, but not to raise them. The rules of the House allot most of its time to Cabinet business, and nearly all legislation now comes from the Cabinet. The Cabinet also has the sole power to move closure, cutting off debate; and, if the parties fail to agree, the Cabinet can move to fix a time-table for the various stages of a bill. But the rules are careful also to provide abundant opportunity for the Opposition to question, criticize, and attack. Twenty-five days of each parliamentary session are specifically allotted to the Opposition to debate any subject it pleases, and on six of those days it can move want of confidence.

**The Legislature: Parliament.** Parliament consists of the Queen, the Senate and the House of Commons.

The Senate has 102 members, appointed by the Cabinet: 24 from Ontario, 24 from Quebec, 24 from the Maritime Provinces (10 each from Nova Scotia and New Brunswick, 4 from Prince Edward Island), 24 from the Western Provinces (6 each), and 6 from Newfoundland. Senators now retire at age 75.

The B.N.A. Act gives the Senate exactly the same powers as the House of Commons, except that money bills must originate in the Commons. The Senate can reject any bill, but rarely does. It does most of the work on private bills (incorpo-

ration of companies, and so on), and subjects general legislation to careful scrutiny in committee. Special Senate committees have also investigated major public problems and produced valuable reports. In December 1971 the Senate had 66 Liberals, 1 Independent Liberal, 19 Progressive Conservatives, 1 Social Credit, 2 Independents, and 13 vacancies.

The House of Commons, to which alone the Cabinet is responsible, has 264 members: 7 from Newfoundland, 11 from Nova Scotia, 10 from New Brunswick, 4 from Prince Edward Island, 74 from Quebec, 88 from Ontario, 13 each from Manitoba and Saskatchewan, 19 from Alberta, 23 from British Columbia, and 1 each from the Yukon and the Northwest Territories. They are elected by single-member constituencies, broadly speaking in proportion to the population of each province; but no province can have fewer members in the Commons than in the Senate. The total number of members is redistributed after each decennial census. Any adult Canadian citizen (with obvious exceptions, such as people in jail) can vote. At December 1971 the Liberals had 150 members, the Progressive Conservatives 71, the New Democratic Party 25, the Social Credit Party of Canada 13, Independents 2, Independent Liberal 1, and there were 2 vacancies.

All legislation goes through three "readings." The first is purely formal. On the second, the House gives the bill "preliminary consideration," and if satisfied, refers it to a committee, where it is dealt with clause by clause. Money bills, and such others as the House thinks fit, are referred to the Committee of the Whole, that is, the whole House, sitting under special rules facilitating detailed discussion. All other bills are sent to one of the 18 "Standing Committees" (12 to 30 members each) which specialize in a certain subject or subjects. The appropriate committee then reports the bill to the House, with or without amendments, and at this stage any member may propose amendments, which are debatable. Then comes third reading. If the bill passes this, it is sent to the Senate, where it goes through much the same procedure.

The Canadian Constitution would be unworkable without political parties. Yet parties are almost totally unknown to Canadian law: a notable example of the conventions of the Constitution. They make possible a stable Government, capable of carrying its policies into effect. They provide continuous organized criticism of that Government. They make possible an orderly transfer of power from one Government to another. They help to educate the electorate on public affairs and to reconcile divergent elements and interests from different parts of the country.

The Liberal party has its roots in the pre-Confederation Reform parties which struggled for the establishment of parliamentary responsible government in the 1840's. The Progressive Conservative party goes back to a coalition of moderate Conservatives and moderate Reformers in the province of Canada in 1854, six years after responsible government had been won. It was broadened into a national party in 1867, when Sir John A. Macdonald, the first national Prime Minister, formed a Cabinet of eight Conservatives and five Liberals or Reformers, whose followers soon became known as "Liberal-Conservatives." The present name was adopted in 1942. The New Democratic Party dates from 1961, when the major trade union federation (the Canadian Labour Congress) and the C.C.F. party joined forces to launch a new party. (The C.C.F.—Co-operative Commonwealth Federation—had been founded in 1932, by a group of farmer and labour parties in



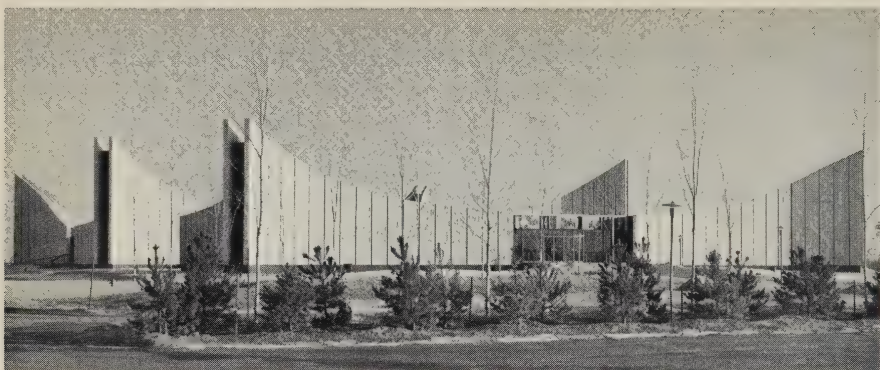
the western provinces.) The Social Credit party of Canada is based on the monetary theories of Major Clifford Douglas and, at the present time, its members in the House of Commons are all from Quebec.

**The Judiciary.** Most of the courts are provincial, but their judges, from county courts up, are appointed by the Government of Canada (except for the courts of probate in Nova Scotia and New Brunswick). Parliament has power to establish a general court of appeal, and other courts for the better administration of the laws it passes, and has established the Supreme Court of Canada and other courts. The Supreme Court of Canada and the provincial courts form a single system, dealing with cases arising under both dominion and provincial laws. The Supreme Court of Canada may also give advisory opinions on any law or proposed law, dominion or provincial.

The Supreme Court of Canada is made up of a Chief Justice and eight Puisne Justices, appointed by the Government of Canada. Three of the nine must be Quebec lawyers. Judges of this court and the provincial superior courts can be removed only by Address to the Governor-General from both Houses of Parliament. None has ever been removed.

The nine justices of the Supreme Court of Canada.





The Peel County (Ont.) Court House.

## Provincial and Territorial Government

In each province, the machinery of government is substantially the same as that of the central government, except that no province has an Upper House.

Most of northern Canada west of Hudson Bay is not part of any province. It is organized in two territories, The Yukon and the Northwest Territories, which come directly under the Government and Parliament of Canada but enjoy a growing degree of self-government.

The Yukon is ruled by a Commissioner, appointed by the Government of Canada, and an elected Council of seven. The Commissioner in Council can pass laws dealing with direct taxation for local purposes, establishment of Territorial offices, sale of liquor, preservation of game, municipal institutions, licences, incorporation of local companies, solemnization of marriage, property and civil rights, and matters of a local and private nature.

The Northwest Territories are ruled by a Commissioner, appointed by the Government of Canada, and a council of fourteen, of whom four are appointed by the central Government and ten elected. The Commissioner in Council has substantially the same powers as in the Yukon.

## Municipal Government

Municipal government, being a matter of provincial jurisdiction, varies considerably. All municipalities (cities, towns, villages, and rural municipalities) are governed by an elected Council. In Ontario and Quebec, there are also counties, which, for certain purposes, group smaller municipal units, and both these provinces have begun to set up regional municipalities for metropolitan areas.

In general, the municipalities are responsible for police and fire protection; local jails, roads, and hospitals; water supply and sanitation; and schools (often administered by distinct boards elected for the purpose). They get their revenue mainly from taxes on real estate, permits, and licences, and grants from the provinces. The total number of municipalities is now about 4,500.

EUGENE FORSEY and JEAN-CHARLES BONENFANT



## Citizenship

There have been over 1,150,000 grants of citizenship since 1947 and the annual total runs close to 60,000. These grants are processed by the Citizenship Registration Branch, which is responsible for the administration of the Canadian Citizenship Act and Regulations. The branch deals with the acquisition and loss of citizenship, naturalization, and proof of status as well as other related applications.

A staff of approximately 200 operates the headquarters in Ottawa and the 13 citizenship courts located in the principal cities. Less populated areas and isolated districts are served by circuit courts. Normal courts of law also handle citizenship cases, as do other government offices and appointed officials, so that the services of the branch are available in remote areas of the country.

The main task of the branch is to give the public continuous service. Besides dealing with the annual case-load of approximately 130,000 applications of

Citizens of Canada have brought customs and traditions from many lands. Here a Ukrainian Shumka dancer and a Scottish Highland dancer perform at Leamy Park in Hull, Que.







The Community Folk Art Council of Metro Toronto, Ont., provided the program for Canadiana Week. Here Butler Irish Dancers perform in front of the City Hall.

various kinds the branch must interpret the Act and Regulations, and on occasion propose revisions to them, as well as review procedures.

The branch also seeks to enlist the help of clubs, ethnic associations, and other community groups in reaching those who can apply for citizenship and in arousing the interest of the public.

### **Natural claims to citizenship**

Natural claims to citizenship are normally derived through parents or by birth within the boundaries of a country. Canada allows both these types of claims, but restricts citizenship acquired through the parents to the father. There are also a number of special clauses to qualify certain categories, such as British subjects or wives of Canadian citizens, who have been legally admitted and were resident in this country prior to 1947 when the present legislation was introduced.

### **Citizenship by grant**

Citizenship may also be acquired by a ministerial grant once application has been made and the requirements have been met. The basic requirements are residence for five years (reduced to one year for the wife of a Canadian citizen), a good character, a knowledge of one of the official languages, an understanding of the responsibilities and privileges of citizenship, the intention to remain in the country as a permanent resident, and acceptance of allegiance to Canada. There are also special provisions dealing with minor children.

## **Education**

Education is a matter of vital concern to Canadians in a very fundamental way. And well it should be, for it is estimated that in the 1970-71 academic year over 6,300,000 persons were enrolled as full-time students in 17,000 educational institutions, being taught by 310,000 full-time teachers, at a cost to the Canadian taxpayer of over \$7,600 million. Another way of looking at these statistics is to observe that one in three Canadians is involved directly in education as either a student or a teacher and that over 20 cents out of every tax dollar collected at all levels of government, federal, provincial, and municipal, is devoted to education. At all levels of government, then, education costs are a considerable factor, and at the municipal level they form by far the largest single item of expenditure.

### **Elementary and Secondary Education**

By virtue of the terms of Confederation, education in Canada is a responsibility of the provinces. There exist in the country, then, distinct provincial systems of education which, while having many features in common, differ in matters of school district organization, curricula, financing, school laws, and so on. Each province has established a Department of Education under a minister who is a member of the Cabinet, and has provided for the establishment and operation of public elementary and secondary schools by locally-elected or appointed school boards which operate under the school act of the province. While delegating much of the responsibility for operating schools to the local educational authorities, provincial departments of education have maintained direct responsibility for certifying teachers, approving school board budgets, and supervising the quality of the provincial education system. Local school boards are responsible for building and maintaining schools, hiring teachers and administrative personnel, providing transportation for pupils where necessary, and, within increasing limits, determining the subjects to be taught and the text-books to be used.

In 1970-71, just over 95 per cent of Canadian children attended publicly-supported and locally operated schools; the remaining 5 per cent attended either privately-operated schools or schools operated under the auspices of the federal government. Federally sponsored schools are, specifically, schools in the provinces for Indian children, schools in the Territories operated by the territorial governments, and schools for armed forces' dependents on major Canadian defence establishments in Canada and overseas.

The last decade in Canada has witnessed major reorganization of most school systems. The trend is towards creating large units of school administration. Alberta and British Columbia were the pioneers in Canada in establishing large units and gradually similar systems have developed in other provinces. The approach to the establishment of large districts has varied from province to province. Some have completely reorganized school districts through legislative action. For example, in 1967 New Brunswick legislated out of existence the 400-odd districts that operated schools at the time, and created 33 new districts covering the whole province. Other provinces have reorganized their school dis-

district system gradually, making use of both legislation and local referenda. Two examples of this are Ontario and Manitoba. In Ontario, the township school area used to be the traditional unit of school administration. Legislation in the 1960's decreed that the township would be the major unit, and subsequent legislation made the county the administrative unit. This gradual introduction of large units of administration has resulted in a reduction in the number of active school boards in Ontario from 3,800 in 1959-60 to 222 in 1970-71. For some years the province of Manitoba has been divided into 48 large "divisions" for secondary school administration but it has many small school districts operating elementary schools. Gradually, through a series of referenda in the school districts, amalgamation of the small school districts with the divisions has taken place, until 1970-71 when only 8 of the 48 large geographical divisions were not organized on the unitary division plan where one board was responsible for both elementary and secondary education.

In Quebec, legislation in 1961 created large units of administration for secondary school education but small elementary school districts have continued to exist. Recent announcements from the province indicate that elementary school districts will be reorganized in 1971-72 and that then only 168 boards will exist to administer elementary education in the province.

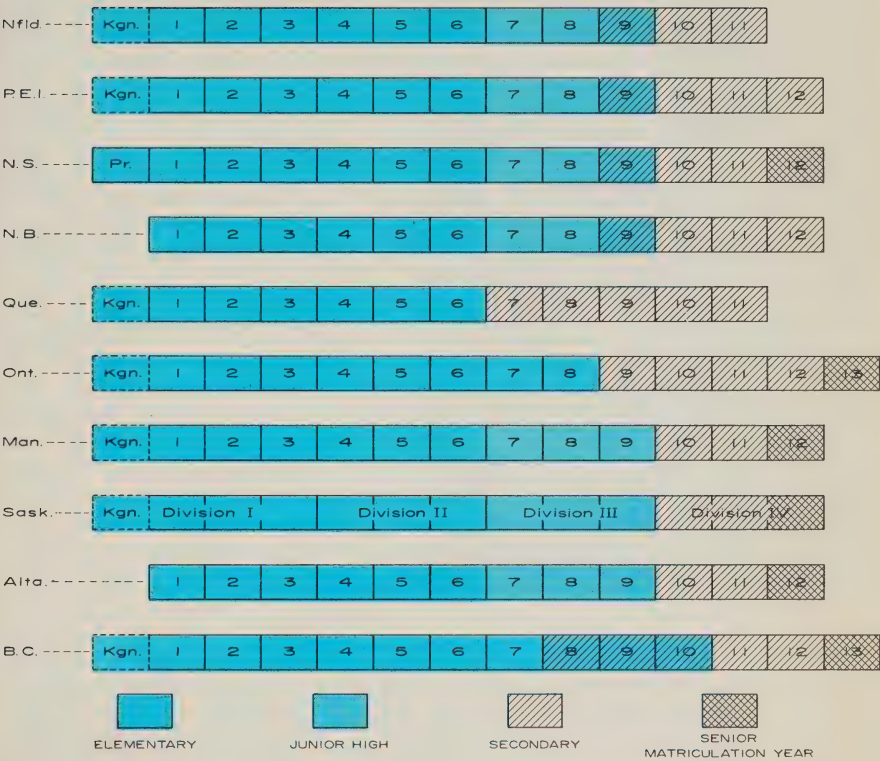
Newfoundland has recently reorganized its school district system by amalgamating most of the Protestant districts that operated schools. On January 1, 1970, 43 districts existed in the province: 15 for Roman Catholic schools, 26 for

Children in the nursery class of the Toronto French School sing and act out the words of a French song.





Provincial Grades Systems



integrated Protestant boards, and one each for the Pentecostal and Seventh Day Adventist boards. Both Nova Scotia and Prince Edward Island have announced plans to reorganize school districts.

No uniform pattern of grade organization exists in Canada. Each province has its own particular system. In interpreting the grade systems of the provinces, the following points should be recognized:

1. The senior matriculation year is defined (for purposes of the chart even though the term may not be used in most provinces) as that point in the secondary school system of the province from which it takes three years to complete a pass bachelor's degree at a provincial university.
2. Ungraded systems, allowing students to progress at their own rate rather than through a lock-step grade promotion system, are being implemented in most provinces. (In reality, the numbers shown in the chart for New Brunswick and Quebec indicate "years" rather than "grades.")
3. Students completing the 11th year of study in Quebec must take two further years at the collegial level (CEGEP) before admission to university.



"Outward Bound" is a rigorous training program of the Alberta Department of Youth, Recreation Branch. Among other accomplishments, boys learn how to climb mountains and survive in the wilderness. Here, climbing a 12-foot wall calls for a team effort.

4. In Ontario, "elementary" Roman Catholic separate schools provide for kindergarten through Grade 10 inclusive.

5. Kindergarten classes are not provided in the public school systems of New Brunswick and Alberta. Only in Nova Scotia is the pre-Grade I year (called "Primary") uniformly provided throughout the province. In other provinces the availability of pre-school classes has been increasing rapidly in recent years.

6. Both Ontario and Manitoba provide pre-kindergarten or nursery classes for children under age five. However there are only limited numbers of these classes.

7. In Nova Scotia, high school graduation may be at either the junior matriculation (Grade 11) or senior matriculation level (Grade 12). Recent developments in the province, however, indicate that there will shortly be only one level of graduation—Grade 12.

8. Grade 13 in British Columbia is being phased out, since this program is offered in the regional and district colleges. In 1971-72, Grade 13 will be eliminated completely.

## Vocational and Technical Education

Vocational and technical education is provided at both the secondary and post-secondary level in most provinces. There are three basic types of institutions—secondary schools (either technical high schools or composite high schools), trade schools that operate at the secondary age level, and post-secondary technical insti-

tutes or community colleges. Most of the trade schools and technical institutes across Canada are provincially operated, while vocational and technical education at the secondary level is provided by local school boards.

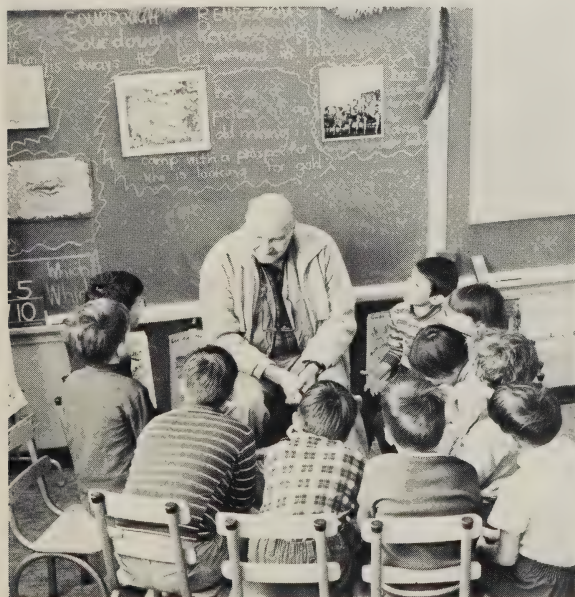
In addition to the vocational education and training available through provincial or local facilities, many private trade schools and business colleges offer a wide variety of trade and technical courses, sometimes through correspondence.

Under the Adult Occupational Training Act, the Government of Canada assumes responsibility for financing the cost of training and re-training adults. Often this arrangement is accommodated through payment to public or private institutions that provide the appropriate training programs.

## Higher Education

Depending on the province and the level of high school graduation, a student may enter an institution of higher education in Canada after anywhere from 11 to 13 years of schooling. Courses of study at universities vary in length, from a three-year program beyond senior matriculation for a pass bachelor's degree, to five or six years for first professional degrees in such fields as dentistry, law and medicine. Master's degree programs require a minimum of one year of study and research beyond an approved bachelor's degree, while doctorates normally require an additional two years beyond the master's degree.

Increasing enrolment continues to be one of the major problems facing Canadian universities, owing in large part to the number of students reaching college age and in part to the increasing importance and prestige attached to a university education. To meet the challenge of increasing enrolments, several new universities have been chartered in the last decade, existing institutions have expanded their facilities,



School children in Whitehorse, Yukon, are enthralled by a sourdough's stories of the old days in the Yukon.



and new colleges have been formed. To help relieve the pressure of increasing enrolments and to provide a variety of post-secondary programs other than university-level courses, several provinces have developed a network of community colleges. In Quebec, the *Collèges d'Enseignement général et professionnel* (CEGEP's) provide two-year programs as a requirement for entrance to the provincial universities and also a variety of three-year terminal vocational programs leading to employment. In Ontario, the Colleges of Applied Arts and Technology offer two and three-year post-secondary non-university programs. In British Columbia, regional and district colleges, of which there were eight in 1970-71, provide two-year university transfer courses as well as career or terminal vocational programs. In Manitoba, the existing institutes of technology have been recently converted to junior colleges. In other provinces, junior colleges or technical institutes or special post-secondary institutions provide facilities for students who are not university-bound and for some university-transfer work.

It is estimated that in 1970-71 some 330,000 full-time students and 147,000 part-time students were enrolled in university-level programs, an increase of approximately 34,000 full-time and 25,000 part-time students.



Students, taking the biology of pollution course at Trent University, Peterborough, Ont., examine a local waterway with the aid of their floating laboratory, Turtle II.



Red River Community College, Winnipeg, Man., offers a course in watch repair.

### Number of School Districts, School Trustees, Schools, and Students in Public School Systems,<sup>1</sup> 1970-71

Province	Number of School Districts <sup>2</sup>				Total Number of School Trustees <sup>2</sup>	Number of Schools <sup>3</sup>	Number of Students <sup>4</sup>
	For Elementary Schools Only	For Secondary Schools Only	For both Elementary and Secondary Schools	Total Number of School Districts			
Newfoundland . . . . .	—	—	43	43	569	820	161,000
Prince Edward Island . .	306	15	3	324	1,191	245	29,900
Nova Scotia . . . . .	—	12	65	77	473	715	214,900
New Brunswick . . . . .	—	—	33	33	441	560	175,800
Quebec . . . . .	—	—	—	—	—	3,300	1,598,800
Ontario . . . . .	145	—	77	222	2,140	4,800	2,022,400
Manitoba . . . . .	75	6	41	122	665	770	246,900
Saskatchewan . . . . .	35	11	79	125	699	1,000	247,300
Alberta . . . . .	—	—	195	195	894	1,260	423,900
British Columbia . . . . .	—	—	81	81	535	1,510	522,400
Yukon <sup>5</sup> . . . . .	—	—	—	—	—	22	4,600
Northwest Territories <sup>6</sup> .	—	—	3	3	15	58	10,000
<b>Canada Total . . . . .</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>15,060</b>	<b>5,657,900</b>

<sup>1</sup>Does not include federal Indian schools, federal schools in arctic Quebec and DND schools overseas.

<sup>2</sup>As of January 1970

<sup>3</sup>Estimated

<sup>4</sup>Preliminary figures

<sup>5</sup>Schools in the Yukon are administered centrally by the Department of Education, Whitehorse.

<sup>6</sup>Except for the Public and R.C. separate school districts of Yellowknife and the R.C. separate school district of Hay River, all elementary-secondary education in the Northwest Territories is administered centrally by the Department of Education, Yellowknife. The number of students indicated is for all of the Northwest Territories.



The Rt. Hon. Lester Pearson confers a degree on a student of Carleton University, Ottawa, Ont., of which he is chancellor.

## Financing Canadian Education

The percentage of Canada's gross national product directed to education rose from 1.5 in 1944 to an estimated 9.0 in 1969, twenty-five years later. As stated previously, the total expenditure on education in 1970-71 was estimated to be about \$7,600 million.

The federal government makes grants, or a tax-sharing arrangement in lieu of grants, for the support of provincial trade and technical education, of second official language and minority language education, of university education and of a variety of manpower programs. The federal government also pays all costs of education for Indian and Eskimo students, children of armed forces' personnel, and some dependent children of the war dead and of veterans.

The brunt of educational costs is borne by provincial governments which have the ultimate responsibility for education in their jurisdiction. In most provinces, the cost of public elementary-secondary education is met through local taxation and provincial grants to school boards. In two provinces (Newfoundland and New Brunswick) almost the total cost of public education is borne by the provincial government out of the general revenues of the province.

In 1967-68, universities and colleges received 70 per cent of their current operating funds from provincial governments and the federal government, 20 per cent from fees, 1.4 per cent from endowments, and 8.6 per cent from other sources.



## Health Care

Responsibility for the administration of health care services in Canada is a direct concern of provincial governments, with municipalities often exercising considerable authority over matters delegated to them by provincial legislatures. The federal government has jurisdiction over a number of health matters of national scope and provides important financial assistance to provincial health and hospital services. All levels of government are aided by a network of voluntary agencies in different health fields.

Advances in medicine and the development of better health services have contributed to a pronounced improvement in the health of Canadians during recent decades. In the period 1941-68, life expectancy at birth for men rose from 63 to 69 years and for women, from 66 to 75.5 years. The infant mortality rate fell steadily from 61.1 per 1,000 live births in 1941 to 19.3 in 1969. The proportion of births taking place in hospitals rose from 49 to 99.5 per cent, and the maternal mortality rate dropped from 36 to 2.1 per 100,000 live births. The three leading causes of death in 1969 were circulatory diseases, tumours, and diseases of the nervous system and sense-organs, which mainly affected persons over 45 years of age, whereas accidental deaths, the fourth ranking cause, were most common among younger adults.

The Department of National Health and Welfare is the chief federal agency in health matters. In conjunction with other federal agencies and with provincial and local health agencies it works to raise the health level of all Canadians and provides assistance to the many who cannot or can only partially assist themselves in the business of daily living. Through the Food and Drug Branch the Department is responsible for protecting the Canadian public from hazards to health in the foods, drugs, cosmetics, and medical devices sold to the public. The Medical Services Branch operates quarantine and immigration medical services and provides health services to Indians and Eskimos and other special groups. The Health Services Branch advises and provides consultative services to provincial and local health agencies on numerous matters concerning the health of Canadians. Technical advisory services to the provinces are provided through the Health Insurance and Resources Branch. Under the Canada Assistance Plan, the federal government contributes 50 per cent of the costs of health care services that provinces make available to persons who are eligible because of proven financial need.

Other important measures to improve the health of Canadians include public education programs on smoking to reduce the incidence of lung cancer and other diseases attributable to cigarette smoking, on maternal and child health to reduce infant and maternal mortality, and on environmental health to strive to eliminate harmful industrial and other chemical wastes from the environment. The Department has also developed a comprehensive program to protect the public from harmful radiation resulting from the use of radioactive materials.

Pollution control in Canada has traditionally been a provincial responsibility, but the Department of National Health and Welfare gives consultative and technical assistance for the investigation and control of specific pollution problems in many parts of the country. It has established a national sampling network to



The children's ward in the Charles Camsell Hospital, Edmonton, Alta.

provide useful information on the quality of the air in Canadian cities. The Department also has direct responsibility to assist the International Joint Commission to cope with air pollutants crossing the Canadian-American border.

### **Medical Care Program**

The Medical Care Act was passed by Parliament in December 1966 and began to operate on July 1, 1968. As of January 1, 1971, all provinces had entered the federal medical care program and it is anticipated that the Yukon and Northwest Territories will join by April 1972. The Medical Care Act provides that the federal government contributes to a province half the cost, for every person, of all insured services furnished under the plans of all provinces, multiplied by the number of insured persons in that province, provided that the provincial plan meets specified conditions. These conditions are comprehensiveness of medical services, universality of coverage, administration by public authority, and portability of benefits between provinces.

Before the adoption of this Act, about 20 per cent of the Canadian population did not have any form of protection against the rapidly rising costs of medical and surgical care; the rest had varying degrees of protection, in a wide range of private plans and public arrangements. Under the new program comprehensive insurance

is available on equal terms and conditions to all residents of all provinces. This feature prevents any Canadian from being refused coverage because of his health, occupation, or age.

The people of Canada today have truly comprehensive protection against the costs of medically required services of physicians and surgeons. This protection is available to all residents and is fully portable from province to province. The national average cost of providing such services in 1971 is estimated at about \$55.60 a person each year. The federal government contributes about half, leaving about \$27.80 a person to be raised by the provinces.

### **Hospital Insurance and Diagnostic Services**

The federal-provincial hospital insurance program now covers 99.5 per cent of the insurable population of Canada. The system of federal grants-in-aid to the provinces to meet about 50 per cent of the cost of specified hospital services is set out in the federal Hospital Insurance and Diagnostic Services Act of 1957. Under the Established Programs (Interim Arrangements) Act, provinces can contract out of various federal-provincial programs, including hospital insurance, and on January 1, 1965, Quebec did so. Accordingly, the federal contribution to the Quebec hospital insurance program is made through tax abatement and not under the Hospital Insurance Act.





To participate in the program, a province is required to make available to all of its residents, under uniform terms and conditions, standard ward hospital care and other specified in-patient benefits including laboratory and radiological diagnostic services. The provinces also have the option of providing insured out-patient hospital services; the pattern varies considerably from province to province.

The provinces are responsible for determining methods of financing and administering the hospital insurance plans, as well as certain details concerning eligibility for benefits. Many provinces have extended the range of their insured out-patient services.

Federal legislation applies only to services provided by approved active treatment, chronic, and convalescent institutions and related facilities; it specifically excludes mental hospitals, tuberculosis sanatoria, and custodial care institutions. Federal payments to the provinces under this program from July 1, 1958, to March 31, 1970, totalled about \$4,225 million and for the fiscal year 1969-70 alone it amounted to \$636 million.

### Health Resources Fund

The federal Health Resources Fund Act in 1966 provided for the establishment of a fund of \$500 million to be applied to the costs between 1966 and 1980 of



A technician in the Radiation Protection Division of the federal Department of National Health and Welfare places a sensor on a pre-determined grid to test the course of effluent from public washrooms in order to detect defects that might permit contamination of nearby Leamy Lake, Que.



The Food and Drug Directorate in Ottawa analyzes fruits and vegetables for possible pesticide residue.

providing facilities for research and for training medical personnel. Payments from the fund may cover up to 50 per cent of the costs of functional planning, constructing, renovating, acquiring, and equipping facilities for education and research in health.

As of March 31, 1970, \$160 million had been approved for payment to the provinces, of which \$106 million had been expended; about two thirds of these sums were for training facilities, and one third for research establishments. The Health Resources Advisory Committee, which consists of the deputy minister of National Health as chairman and a member from each province, advises the Minister of National Health and Welfare on all aspects of the program and approves the provincial plans for the development of their facilities.

### **National Health Grants**

The National Health Grant Program, begun in 1948, was established to assist the provinces in extending and improving public health and hospital services. By March 31, 1970, federal payments to provinces and territories had totalled \$900 million; \$325 million of this amount was provided for hospital construction and





More and more persons in Canada are cycling to keep fit and to eliminate the pollution of the air emitted by their automobiles.

renovation. Since the establishment of this program, the largest single grant has been in support of hospital construction, but as of March 31, 1970, this grant was terminated. The government has also indicated its intention of terminating the General Health Grants, except professional training and public health research grants, by the end of the fiscal year 1971-72.

Under a new National Health Grant established in April 1969 the federal government has allocated \$2.3 million, on the basis of 10 cents per capita for the fiscal year 1970-71. This new program is administered by the Department of National Health and Welfare and its basic objectives are to stimulate research studies, service demonstrations, and training activities of national significance for the improvement of health services.

### **Chronic Illness and Rehabilitation**

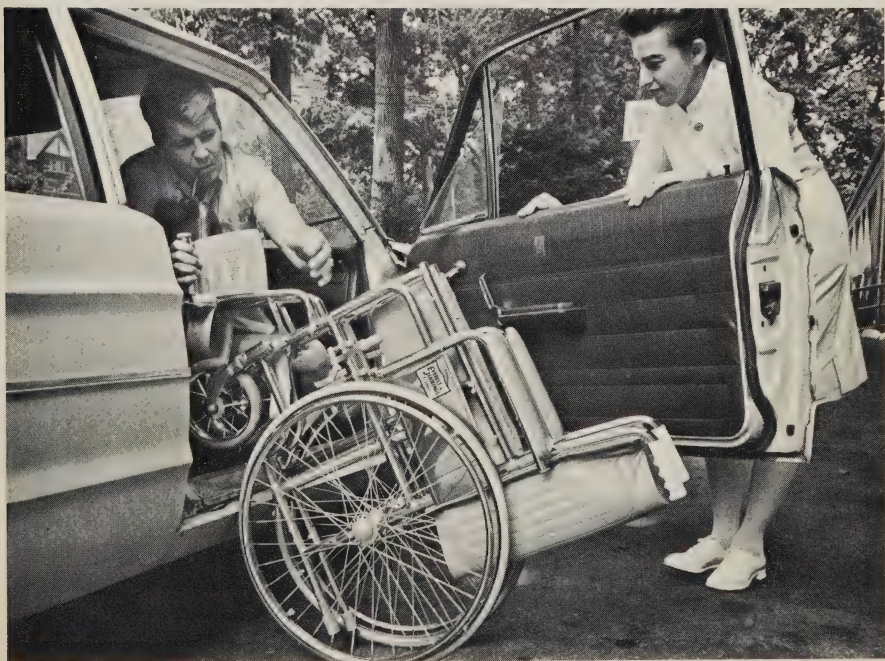
Increased longevity resulting from effective measures against infant mortality and communicable disease, together with general advances in medical care and drugs, have focused professional and public attention on the control of chronic disease and long-term illness. Advances are being made in multiphasic screening

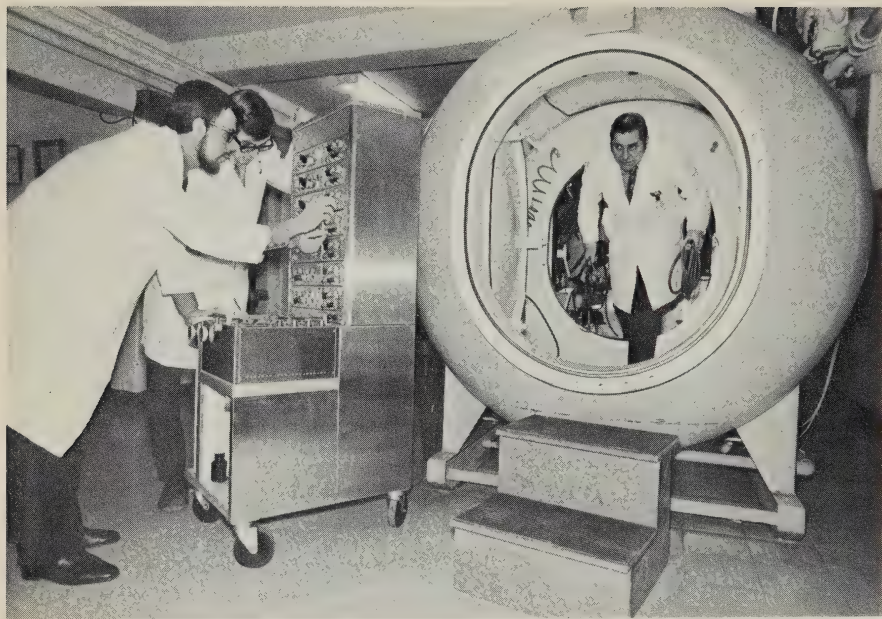


for the detection of chronic conditions such as diabetes and glaucoma; voluntary organizations co-operate with public agencies in this screening. Most larger general hospitals, and particularly teaching hospitals, have set up specialized outpatient clinics for arthritis, diabetes, cystic fibrosis, heart defects, cancer, orthopaedics, and neurology. Extended treatment wards in general hospitals, chronic-disease hospitals, nursing homes, or homes for special care; domiciliary facilities for the aged and feeble; and day centres are available in most cities in Canada.

The success of programs for the rehabilitation of injured workers under provincial workmen's compensation, for war veterans through the Department of Veterans Affairs, and for handicapped children under various auspices has stimulated the expansion of rehabilitation services to the disabled. The Department of National Health and Welfare through its National Health Grant Program has promoted the development of rehabilitation services. Since January 1966 the Department has also assumed responsibility for nation-wide prosthetic services. There are three prosthetic and orthotic research and training centres in addition to the central prosthetic establishment in Toronto.

Learning to roll one's own wheelchair into a car is an essential part of a paraplegic's rehabilitation.





A pressure chamber was originally installed in the Toronto General Hospital to treat divers or tunnel workers with the bends. Now it is used more often by patients with conditions aided by increasing oxygen saturation of body tissues, such as gas gangrene and carbon monoxide poisoning.

In co-operation with the federal Department of Manpower and Immigration, provincial health or welfare departments also administer vocational rehabilitation programs to restore disabled adults to gainful employment. Canada Manpower Centres place the handicapped in suitable employment, and some work in sheltered workshops. All provinces provide special educational facilities for handicapped children.

### **Mental Illness and Mental Retardation**

Governments and citizens' groups are developing special community resources to provide continuing care to the mentally ill and mentally retarded. The facilities of general hospitals and community psychiatric hospitals for short-term in-patient psychiatric therapy and related day care, emergency, and out-patient services have been expanded. The Canadian Mental Health Association through its White Cross Centres aids the social and vocational adjustment of discharged psychiatric patients. Under the Mental Retardation Grant, the federal government provides financial assistance to various voluntary organizations which carry out research and promote the welfare of the mentally retarded.

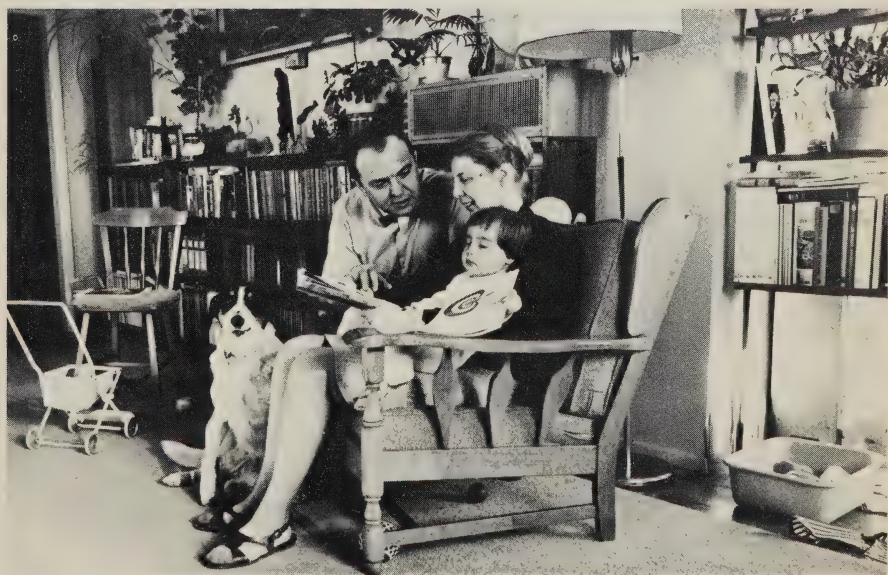


## Drug Abuse

Following the interim report of the Commission of Inquiry into the Non-medical Use of Drugs (the LeDain Commission), the Department has undertaken various programs to seek solutions to the problem of the non-medical use of drugs. The Food and Drugs Act and the Narcotic Control Act have been amended to make provision for the establishment of regional drug analytical laboratories across Canada. The new regulations will permit a physician to receive a sample of a controlled or narcotic drug from an individual under his professional care and to transmit it for analysis to scientists authorized to possess the drug for this purpose. This service is of extreme importance to physicians treating drug abuse sufferers. In co-operation with provincial health and welfare departments and other agencies the Department is planning to set up an information program which will provide Canadians with up-to-date factual information on drug abuse. For the fiscal year 1970-71, the Department has allocated a total of more than \$400,000 to finance various activities to deal with the problem of drug abuse.

## Family Planning Program

In September 1970, the Department initiated a new program of research, training and public information in the field of family planning. Under this program the Department would provide financial assistance to provincial departments and private agencies carrying out research and dissemination of family planning information. The purpose of the Family Planning Program is to reduce the number of unwanted children, and of abused, neglected, deserted and abandoned children, as well as the welfare costs.





## Social Welfare

A wide range of income security and social services are provided by federal, provincial, and local governments and by voluntary agencies in Canada. The Department of National Health and Welfare has the major federal role in welfare matters; other federal agencies with important welfare functions include the Unemployment Insurance Commission, the Department of Veterans Affairs, and the Department of Indian Affairs and Northern Development. The provinces, and by delegation, the municipalities, have primary responsibility for the administration of social assistance and welfare services to persons in need. Public services are complemented by a wide range of services provided by voluntary agencies.

A number of programs are available to provide protection to Canadians: the Canada Pension Plan, old age security pensions and the guaranteed income supplement, family and youth allowances, provincial assistance programs for persons in need, child welfare services, and services for the elderly, including institutional care.

A White Paper on Income Security for Canadians was tabled in the House of Commons on November 30, 1970, in which proposals were made to replace family allowances with a family income security plan, to amend the old age security and guaranteed income supplement programs, to amend the Canada pension plan, and to hold discussions with the provinces to improve provincial social assistance programs financed through the Canada Assistance Plan. The proposals relating to old age security and the guaranteed income supplement were enacted in December, 1970.

### The Canada Pension Plan

In 1966 a contributory social insurance program was introduced. With its counterpart, the Quebec Pension Plan, it covers most of the Canadian labour force. Employees and employers both contribute at a rate of 1.8 per cent on earnings between \$600 and the maximum of pensionable earnings, which in 1971 was \$5,400 a year. The earnings ceiling is adjusted up to a maximum of 2 per cent in accordance with the Pension Index developed for the plan. Self-employed persons contribute 3.6 per cent of their earnings provided that these are at least \$800 a year. Monthly retirement pensions to persons 65 years of age or over are equal to 25 per cent of the contributor's average monthly pensionable earnings but are payable at reduced rates until 1976 when they become payable at their full rates. Survivors' benefits payable since February 1968 include pensions for widows, disabled widowers, and orphans, and a lump sum death benefit. Pensions became available in 1970 for eligible contributors who become disabled, with additional benefits for their dependent children. Pensions are also adjusted each year on the basis of the Pension Index.

### Old Age Security

The federal government pays a monthly pension to all persons aged 65 and over



who meet the residence requirements. A person must have resided in Canada at least 10 years immediately before his application is approved; any gaps in this 10-year residence can be made up by periods of residence in earlier years from age 18, equal to three times the gap, provided the applicant has lived in Canada for the year immediately prior to making an application. From 1968 to 1970 the basic pension of \$75 was increased annually by 2 per cent on the basis of the Pension Index. Under 1970 legislation the monthly pension was set at \$80 effective from January 1971.

The number of recipients of old age security was 1,711,184 by December 31, 1970, and payments for the fiscal year 1969-70 amounted to \$1,467,056,517.

### **Guaranteed Income Supplement**

Old age security pensioners who have little or no other income may receive a supplement under the Guaranteed Income Supplement program introduced in 1967. Under legislation enacted in 1970, the maximum supplement is \$55 for a single pensioner or for a couple when only one spouse is a pensioner, and \$95 where both spouses are pensioners. The supplement is reduced by \$1.00 for every \$2.00 of income over and above the old age security pension. For persons eligible to receive the supplement, both it and the old age security pension will be increased annually after 1971 by up to 2 per cent on the basis of increases in the



Pension Index. A declaration is made each year on the preceding calendar year's income, and benefits in the current fiscal year are based on this declaration. Income is determined in the same way as under the Income Tax Act, and for each married applicant it is taken as one half of the combined income of the married couple. In 1971 the maximum supplement together with the old age security pension guarantees a monthly payment of \$135 to a single pensioner or a couple where only one spouse is a pensioner, and \$255 to a couple where both are pensioners.

On December 31, 1970, there were 821,813 persons receiving supplements. Expenditures for the 1969-70 fiscal year amounted to \$263,478,628.

### **Family Allowances, Family Assistance, and Youth Allowances**

Family allowances are paid by the federal government to the mother on behalf of children under 16 years of age who were born in Canada or who have lived in Canada for one year. The monthly rate is \$6 for children under 10 years of age and \$8 for children aged 10-15. On December 31, 1970, family allowances were being paid for 6,833,903 children in 3,012,297 families. Payments for the 1969-70 fiscal year amounted to \$560,050,000.

Family assistance is paid at the family allowance rates for each child under 16 without a year's residence who is supported by an immigrant who plans to reside







The computerized cheque-writers of the Department of National Health and Welfare issue some five million cheques a month.

permanently in Canada, or by a Canadian returning to Canada to live here. It is paid for a period of one year until the child is eligible for family allowances. On December 31, 1970, there were 24,794 children in 12,273 families receiving this form of assistance. Payments in the 1969-70 fiscal year amounted to \$2,856,846.

Children resident in Quebec may receive additional allowances under the Quebec Family Allowance Program introduced in 1967. These allowances are payable twice yearly for Quebec children from birth until their sixteenth birthday at the annual rate of \$30 for one child, \$65 for two, \$105 for three, \$155 for four, \$215 for five, \$285 for six, and an extra \$70 for each child after the sixth. In addition, a supplementary allowance at the annual rate of \$10 is payable for children aged 12 to 16 years inclusive.

Under the federal government's Youth Allowances Program, \$10 a month is payable for children aged 16 and 17 who are attending school full time or who are unable to attend school because of mental or physical disability. Quebec has its own schooling allowances program for which it receives compensation from the federal government. It is comparable to the federal program which operates in other provinces. On December 31, 1970, allowances were being paid for 493,143

youths exclusive of those in Quebec. Federal expenditures on these youth allowances for the 1969-70 fiscal year were \$55,101,900.

## **Social Assistance**

Financial aid is available under provincial or municipal auspices to persons in need and their dependents. The costs of aid and of certain welfare services supplied to such needy persons are shared with the federal government under the Canada Assistance Plan. Persons assisted include widows and other needy mothers with dependent children, persons who cannot work because of their age or because of mental or physical disability, unemployed persons, and persons whose benefits from other sources are not adequate to meet their needs. Allowances are granted to cover the basic costs of food, clothing, personal care and shelter, and to cover special needs such as household furnishings, school supplies, and homemaker services when necessary. Aid may also be given in the form of institutional care for elderly persons who are no longer able to look after themselves.

The special federal-provincial programs for disabled persons and blind persons under which allowances of \$75 a month are paid to needy persons with at least 10 years residence have been discontinued in a number of provinces and the needy blind and disabled are now assisted in these provinces under provincial social assistance programs without residence requirements.

## **Child Welfare**

The term "child welfare" refers particularly to statutory services for the protection and care of children who are neglected or who are temporarily or permanently without parental care. Services include protection for children in their homes, foster home care, adoption services, and services to unmarried parents. Statutory child welfare services come under the jurisdiction of provincial authorities and are administered by provincial departments of welfare or by voluntary agencies, usually children's aid societies. The objective of these programs is to strengthen the family and if the family has broken down to provide substitute care for the children according to their needs. Special efforts are made to place handicapped children in adoption homes. The number of completed adoptions in Canada is currently about 19,000 per year.

## **Welfare Services**

Welfare services in communities are available from provincial, municipal, and voluntary agencies. Among these are programs for the elderly, rehabilitation and counselling services, homemaker and day care services, community development services, and services for special groups such as the youth, the handicapped, and so on.

Public day care services for children of working mothers have developed unevenly throughout Canada, and are largely concentrated in large urban areas.





A deaf child learns to form words by sensing a teacher's lip movements.

Island Lodge is a home for the aged provided by the Regional Municipality of Ottawa-Carleton, Ont.





## Services for the Aged

A variety of community services under public and voluntary auspices serve older persons. These include information, counselling and referral services, friendly visiting, housing registries, and homemakers' services. Clubs and centres provide recreation and social activities in addition to the usual services. In some centres "meals-on-wheels" programs have been organized. Specially designed low-rental housing projects have been built for older persons, financed through federal low-interest loans and provincial, municipal, and voluntary funds. Institutions for older persons unable to care for themselves are operated under public, voluntary, or religious auspices, and include residential and nursing homes.

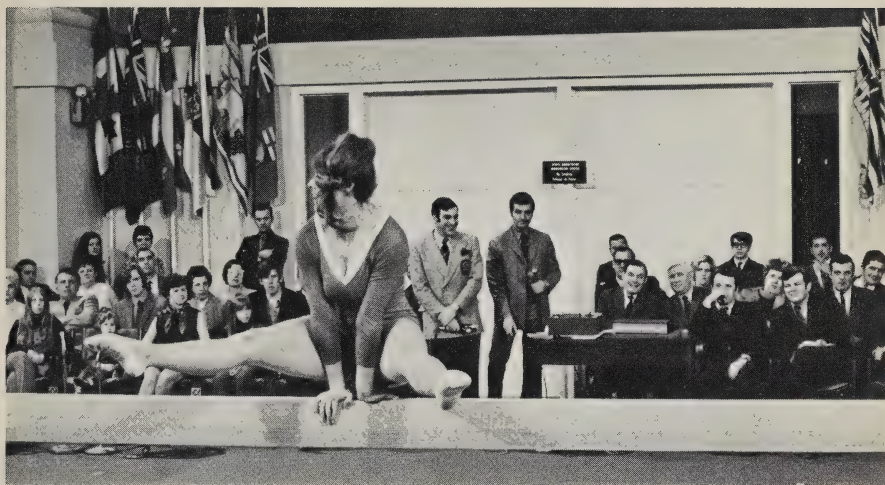
## National Welfare Grants

To assist in the development and strengthening of welfare services in Canada, the federal government provides project grants to provincial and municipal welfare departments, national and local voluntary agencies and organizations, schools of social work, and research institutions for demonstration, research, manpower, social action, and other projects considered to have national significance.

Training grants, scholarships, and fellowships are awarded to individual Canadians for professional education and training in social work. The variety of provisions within the program along with the associated consultative services allow it to operate as a flexible instrument in the development of welfare services and to give major emphasis to experimental and innovative activities in the welfare field.

The Canadian National Institute for the Blind trains those so afflicted.





Marilynn Minaker performed in the Centennial Centre in Ottawa on the occasion of the Cross Country Sports competition.

### **Fitness and Recreation**

All provinces and most of the larger municipalities operate active fitness and recreation programs, both through the organization of community services and through the school systems.

The Federal Fitness and Amateur Sport Act of 1961 provides federal aid through direct services and grants to national organizations and to the provinces. The Department of National Health and Welfare administers the federal program with the advice of a National Advisory Council. Grants are made to encourage amateur sport and to assist Canadian participation in international competitions.

### **International Social Development and Social Security**

The Department of National Health and Welfare assists Canada's work for the United Nations social development activities through representation on and work for the United Nations Commission for Social Development and UNICEF. Financial aid and staff support are provided to the International Council on Social Welfare, the International Union of Family Organizations and other such organizations concerned with social development. The Canadian International Development Agency is assisted in overseas aid projects in the social field.

The Department is concerned with and represented in Canada's work for the International Labour Organization on the development of international social security instruments and in the professional aspects of social security development carried on by the International Social Security Association. It works closely with the Permanent Inter-American Committee on Social Security on technical assistance matters, and negotiates and administers agreements with other countries on social security matters.

## Veterans Affairs

The Department of Veterans Affairs administers a continuing program of assistance to nearly a million Canadian veterans. It provides medical treatment and services for eligible veterans as well as other services such as land settlement, home construction, and also welfare services for veterans and their dependants and educational assistance for children of the war dead.

The Canadian Pension Commission is responsible for the administration of the Pension Act and is an independent body responsible to the Minister of Veterans Affairs. Pensions totalling more than \$200 million for death and disability were paid to nearly 160,000 veterans and dependants last year.

The War Veterans Allowance Board is also an independent body. More than \$80 million in WVA allowances was paid to veterans and widows and orphans in the fiscal year 1970-71.

The Minister of Veterans Affairs announced on December 2, 1970, that the Government had approved increases in both disability pensions and war veterans allowances of 10 per cent and 15 per cent respectively. These increases were to take effect on April 1, 1971.

The first major re-structuring in half a century of the Canadian Pension Act in March, 1971 was completed by the passing of new legislation. This was the culmination of several years of study which had produced both the report of the Woods Committee and the Government's White Paper on Veterans Pensions. This comprehensive overhaul of the Pension Act resulted in extensive improvements. The more significant ones were the establishment of a new and independent Pension Review Board, separate and increased allowances for exceptionally incapacitated 100 per cent pensioners, special provisions for all prisoners of war of the Japanese, the formation of an independent Bureau of Pensions Advocates, and a clarification of the "benefit of the doubt" clause.

Because of the years which have passed since the end of the Second World War, the rehabilitation part of Canada's veterans programs is virtually complete but what might be termed the medical treatment, or welfare services, aspect of the program grows each year and will continue to do so for many years to come. The Department is still responsible for operating nine hospitals and three veterans homes in Canada. During the past year nearly 29,000 veterans were treated or given long-term care in these institutions.

In September, 1970, the Minister officially opened the new Sainte Anne's Hospital at Sainte-Anne-de-Bellevue, Que. It replaced the complex of buildings which was commenced in 1917 for the returning casualties of the First World War. The new Sainte Anne's has been acclaimed as the finest hospital of its type in the world.

Treatment for pensioned disabilities is also provided by the Department to Canadian veterans who require it, in non-departmental hospitals both in Canada and abroad.

Loans and assistance to veterans to engage in full, or part-time farming or commercial fishing or to build homes are provided by the Veteran's Land Act. Since the Act was passed in 1942, loans and grants have been made to more than





The newest veterans' hospital is that just completed at Sainte-Anne-de-Bellevue, Que.

122,000 veterans including nearly 3,000 in 1970-71. From the beginning of operations to the end of 1970 loans advanced have totalled close to \$1,049 million of which 53 per cent, \$555 million, has been repaid.

The year 1970 was historically noteworthy in that it marked the 25th Anniversary of the end of the Second World War. Two special ceremonies involved the Department in an organizing and co-ordinating role. The first was the celebration of the liberation of Holland by the First Canadian Army. An official delegation, headed by the minister, and including representatives of the Royal Canadian Legion, the National Council of Veterans Associations in Canada, and World War II commanders of the Navy, Army, and Air Force, took part in the joint Canadian-Dutch ceremonies. The main service was held at the Groesbeek Canadian Cemetery in Holland where are buried 2,335 Canadian servicemen who died freeing the Netherlands.

On May 8, 1970, a memorial service was held on Parliament Hill in Ottawa, to commemorate the end of the war in Europe. The Governor-General, the Prime Minister, members of the Senate, the Cabinet, and the House of Commons, and representatives of many foreign governments attended this solemn and moving event.

# Labour and Manpower

## Labour Legislation

Labour legislation is enacted by both the federal Parliament and the provincial Legislatures. Parliament has authority to enact labour laws governing employers and employees in certain industries, in particular transportation and communication services extending beyond the limits of a province. Most laws for the protection of workers are provincial. Labour Ordinances are enacted by the Territorial Councils of the Yukon and Northwest Territories.

### Labour Standards

In the labour standards field, a minimum age for employment and minimum standards of wages, hours and overtime, annual vacations and public holidays are set for workers under federal jurisdiction by the Canada Labour (Standards) Code. A number of additional employment standards, including maternity leave, equal pay, notice of termination of employment, and severance pay, were established by amendments to the Code in 1971. Similar standards in each of these areas are set by provincial legislation.

A compulsory school attendance law in each province forbids the employment of school-age children during school hours. In general, 18 years is the minimum age for work underground in a mine and 15 or 16 years the minimum age for other employment. Minimum wages applying to most employees have been established in every jurisdiction, as indicated in the table below. Wage payment and wage collection laws have been a subject of legislative attention in recent years.

**General Minimum Wage Rates for Experienced Adult Workers**

Jurisdiction	Hourly Rates
Federal .....	Workers 17 and over: \$1.75
Newfoundland .....	Workers over 18: men, \$1.25; women, \$1.00
Prince Edward Island .....	Men over 18, \$1.25; women, 95¢
Nova Scotia .....	Workers 18 and over: men, \$1.35 (larger centres), \$1.25 (rest of province); women, \$1.20 (larger centres), \$1.10 (rest of province)
New Brunswick .....	\$1.25
Quebec .....	Workers 18 and over: \$1.50
Ontario .....	\$1.65
Manitoba .....	Workers 18 and over: \$1.50
Saskatchewan .....	Workers 17 and over: \$1.50 (ten cities), \$1.40 (rest of province)
Alberta .....	Workers 18 and over: \$1.55
British Columbia .....	\$1.50
Yukon and Northwest Territories .....	Workers 17 and over: \$1.50

Six jurisdictions—the federal government, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia—have general laws regarding hours of work, either



setting maximum hours beyond which work is prohibited except under special regulations or with a permit, or establishing standard hours, after which an over-time rate must be paid. Working hours in specific industries are regulated under other laws in each jurisdiction.

Vacations with Pay, by Province

Jurisdiction	Length of Annual Vacation	Vacation Pay
Federal .....	2 weeks	4% of annual earnings
Newfoundland .....	2 weeks	4% of annual earnings
Prince Edward Island .....	1 week	2% of annual earnings
Nova Scotia .....	2 weeks	4% of annual earnings
New Brunswick .....	2 weeks	4% of annual earnings
Quebec .....	2 weeks	4% of annual earnings
Ontario .....	1 week; 2 weeks after 2 years' service	2% of annual earnings in first year; 4% of annual earnings after second year
Manitoba .....	2 weeks	Regular pay
Saskatchewan .....	2 weeks; 3 weeks after 5 years' service	1/26 of annual earnings in first four years; 3/52 of annual earnings after fifth year
Alberta .....	2 weeks	Regular pay
British Columbia .....	2 weeks	4% of annual earnings





Employees throughout Canada are legally entitled to a paid annual vacation. Two weeks with pay after a year of employment is the general standard; three provinces provide for one week. In Ontario and Saskatchewan, the vacation increases with length of service (two weeks after two years in Ontario, and three weeks after five years in Saskatchewan). Vacation pay is payable on termination of employment before completion of a year's service.

Under federal, British Columbia, and Saskatchewan legislation, employees are entitled to eight paid holidays; Alberta and Manitoba provide for seven. Employees who work on a holiday must be given premium pay, in addition to a normal day's wages. Nova Scotia and Ontario require an overtime rate to be paid when employees work on certain holidays.

All jurisdictions have enacted fair employment practices laws forbidding discrimination in employment and trade union membership on grounds of race, colour, religion, or national origin. This legislation has been expanded in most provinces to form a human rights code. Five provinces (British Columbia, Mani-



Shaft sinkers are hauled to the surface in a bucket at a new mine in the Sudbury district of Ontario.

toba, Newfoundland, Ontario, and Quebec) prohibit employment discrimination based on sex, and three (British Columbia, Newfoundland, and Ontario) forbid discrimination on grounds of age.

Equal pay laws have been strengthened in the federal jurisdiction and a number of provinces in regard to the criteria for determining equal work and the method of enforcement. The laws in question no longer require the filing of a written complaint.

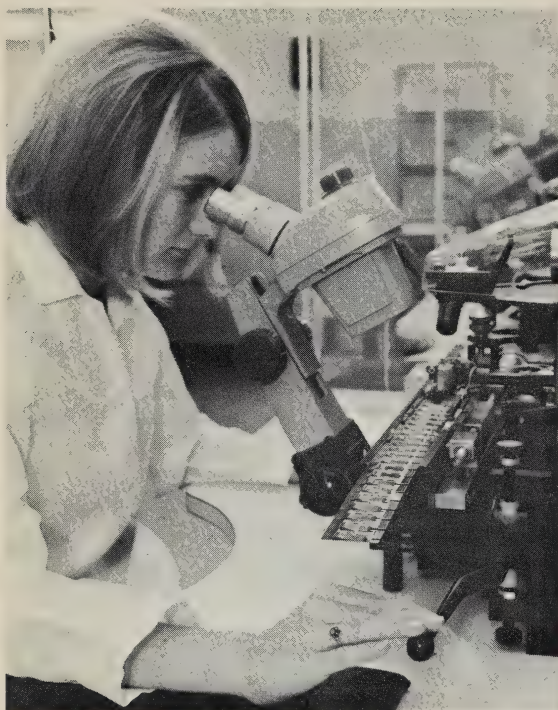
Parliament and seven provinces (Newfoundland, Prince Edward Island, Nova Scotia, Quebec, Ontario, Manitoba, and Saskatchewan) have enacted legislation requiring an employer to give notice to the individual worker whose employment is to be terminated. In federal undertakings, two weeks' notice is required. In Ontario the period of notice varies, with length of service, from one week to eight weeks. In the other provinces, notice of one week or notice equal to the regular pay period is the usual requirement.

The federal, Ontario, and Quebec legislation requires the employer to give advance notice of mass lay-offs to the Minister of Labour in order to permit government authorities to develop programs for the re-establishment of the employees affected. The length of notice required varies with the number of employees involved. Under the federal Code, severance pay is payable on termination of employment to an employee who has had five or more years of continuous service with his employer.

### Notice of Mass Lay-offs

Jurisdiction	When Notice Required	Length of Notice	To Whom Notice Given
Federal	50 or more employees dismissed within 4 weeks	50-100 employees: 8 weeks 100-300: 12 weeks More than 300: 16 weeks	Minister of Labour, Department of Manpower and Immigration, and trade union or employee
Quebec	10 or more employees dismissed within 2 months	10-100 employees: 2 months 100-300: 3 months More than 300: 4 months	Minister of Labour and Manpower
Ontario	50 or more employees dismissed within 4 weeks	50-199 employees: 8 weeks 200-499: 12 weeks 500 or more: 16 weeks	Minister of Labour and each employee

An employee is entitled to maternity leave of at least 17 weeks (11 prenatal and 6 postnatal) under federal jurisdiction and at least 12 weeks (6 prenatal and 6 postnatal) in British Columbia, New Brunswick, and Ontario. The Ontario Act applies to employers with 25 or more employees. To be eligible for leave under the federal and Ontario laws, the employee must have worked for her employer for at least a



A technician works with microscope and semi-automatic equipment to weld minute strands of gold wire to interconnect package posts and ohmic metal patterns on the circuit.

year. The laws protect the employee against dismissal for reasons arising from maternity leave during a specified period or throughout pregnancy, and, Ontario and the federal government guarantee that on her return to work she must be reinstated without loss of benefits.

Safety laws set minimum standards of safety and health to be observed in places of work. These laws are continually being revised to meet new conditions. Workmen's compensation laws provide benefits for disability caused by work accidents or industrial disease. Legislation is in effect in all provinces providing for government-supervised apprenticeship training and for the certification of skilled tradesmen.

## Collective Bargaining

All jurisdictions have legislation governing collective bargaining. These Acts recognize the right of employees to organize and they require an employer and a certified trade union to bargain collectively to conclude a collective agreement covering wages and other terms of employment. Except in Quebec, a representative labour relations board is responsible for the certification of a trade union as the exclusive bargaining agent for a unit of employees. In Quebec, certification functions are performed by special officers of the Department of Labour and Man-



power and there is provision for appeals to the Labour Court. Unfair practice provisions place limitations on employers, and on employees or their unions, regarding interference with each other's rights.

Under all the Acts, government conciliation services are available to assist the parties to reach an agreement; a strike or lockout is forbidden while such conciliation is in progress. A collective agreement is binding on the parties and on the employees covered. While it is in force, strikes are prohibited and disputes must be settled through a grievance procedure and, if necessary, arbitration.

In some provinces certain classes of employees engaged in essential services, such as firemen, policemen, or hospital employees, are forbidden to strike and must submit any unsettled contract disputes to binding arbitration. Both *ad hoc* and continuing laws have been adopted in a number of jurisdictions to end strikes that are deemed to endanger the public interest. In British Columbia, the Mediation Commission, set up under a 1968 statute to act as an independent mediation agency, may, at the direction of the Cabinet, invoke compulsory arbitration to protect the public interest and welfare.

In most provinces civil servants have collective bargaining rights and the right to negotiate is being extended to members of various professional groups. A number of provinces have enacted legislation adapted to the special characteristics of the construction industry. In several, provision has been made for accreditation of employers' organizations as bargaining agents, a procedure somewhat similar to union certification.

Using a mechanical transplanter, a crew plants broccoli seedlings on a farm in New Brunswick.



## Unemployment Insurance

The Canadian Unemployment Insurance Act, administered by the Unemployment Insurance Commission, became law on Aug. 7, 1940. The Commission was delegated to administer a national program of unemployment insurance and to establish and maintain an employment service. A network of local offices designed to carry out those two functions was established across Canada. Insured persons wishing to claim benefit do so by contacting a local office of the Unemployment Insurance Commission either in person or by mail. Thus, while it is not necessary for a claimant to report first to the Commission to register for employment (as he had to do before April 1, 1965) the necessary information for registration for employment is passed by Unemployment Insurance officials to the Canada Manpower Centres, whose programs are discussed below.

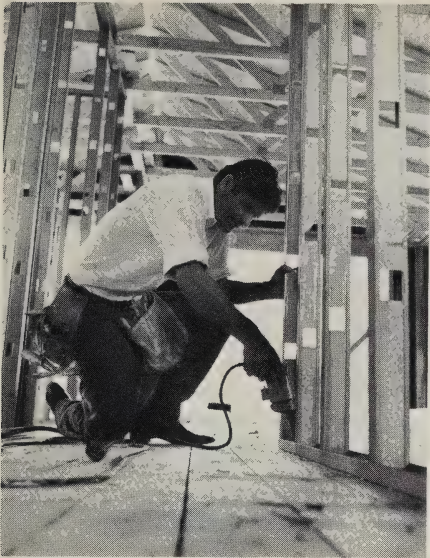
Coverage is compulsory. All persons employed under a contract of service are insured unless specifically excepted. Excluded is such employment as domestic service, school teaching, and employment at other than an hourly, daily, piece, or mileage rate with annual earnings exceeding \$7,800. Persons employed at an hourly, daily, piece, or mileage rate are insured regardless of their earnings. Effective April 1, 1967, unemployment insurance was extended to certain farm workers; the main exclusions are members of the employer's family.

It is estimated that close to 80 per cent of paid workers came under the Act by March 1969. Equal contributions are required from employers and employees, the specific amounts to be determined by the weekly earnings of the employee. The federal government adds one fifth of this total and pays the administrative costs. In order to protect, in some measure, the standard of living of the wage-earner when unemployed, the weekly benefit rate is related to the weekly contribution, which varies between defined classes of earnings. The contribution schedule contains 10 classes, ranging from 10 cents, if weekly earnings are under \$20.00, to \$1.40 if weekly earnings are \$100.00 or over. Maximum weekly benefit rates are \$42.00 for single persons and \$53.00 for those with dependants. An allowable earnings clause provides automatic adjustment of weekly benefit when earnings in a week exceed 50 per cent of the claimant's benefit rate.

The Act contains a special provision by which the usual contribution requirements are relaxed during a five-and-a-half-month period beginning with the week in which December 1 occurs. During this interval, workers unable to fulfil the normal requirements for benefit may draw seasonal benefit if they have at least 15 weeks of insured employment since March 31, or if a regular benefit period terminated since the previous mid-May. During the period November 24, 1968, to May 17, 1969, approximately 43 per cent of the benefit periods established were identified as "seasonal benefit periods."

During the 12 months ending March 31, 1969, a total of 1,846,000 new and renewed claims for benefit were filed at local offices. On the average, 414,000 persons were claiming benefit at the end of each month during this period. Payments amounted to \$459,185,000. For the 12 months ending March 31, 1968, comparable data were 1,887,000 claims filed, 394,000 claimants, and payments amounting to \$388,583,000.







## Manpower Programs

The Department of Manpower and Immigration pursues an active manpower policy aimed at helping Canadians respond to economic and technological change. It offers counselling and placement services across the country.

To assist more than 4,000 Manpower counsellors in 390 Canada Manpower Centres to meet departmental goals, Parliament has passed important legislation. Under the Canada Manpower Training Program, a worker may be referred by a CMC counsellor to a course to develop or upgrade skills. He may qualify for a living allowance during the training period if he has been in the labour force for three years, or if he has one or more dependents fully supported by him.

The Canada Manpower Mobility Program, provides assistance to CMC clients who are unemployed or are about to be, or who are under-employed and have little or no prospect of finding employment in the area where they live. Assistance is provided in the form of financial grants to enable workers to travel to seek suitable employment, to relocate, or to take occupational training outside their home area.

Rehabilitation services are available to physically or socially handicapped CMC clients through cost-sharing agreements with provincial governments. The Vocational Rehabilitation Program provides for training, medical restoration, aptitude assessment tests, counselling, and training allowances.

An unusual classroom is found on the George Brown Community Campus, a 40-foot trailer. The trailer can be moved from spot to spot in the city of Toronto, where such diverse subjects as typing are taught to women who propose to enter the labour force, and report-writing is taught to downtown executives.



The Canada Manpower Consultative Services Program assists management and labour to cope with problems resulting from technological and economic change.

Special employment programs are conducted on behalf of students, older workers, retiring members of the armed forces, and seasonal workers.

The Canada Manpower Centres are co-ordinated by five regional offices in Halifax, Montreal, Toronto, Winnipeg, and Vancouver. All manpower programs and services are implemented through these field offices, linked by telex communication to facilitate the flow of complete labour market information from coast to coast.

## Regional Economic Expansion

The creation of the Department of Regional Economic Expansion in April 1969 marked the beginning of a new trend in regional expansion policy in Canada. The objective of the Department is to make sure that economic growth is distributed widely enough throughout Canada so that, in regions of slow growth, employment and income opportunities will be brought as close as possible to those existing elsewhere in the country without jeopardizing the normal rate of national economic growth. In 1970, 22 "special areas" in 8 provinces were designated to receive help under the Department's programs.

In order to achieve its objective, the Department of Regional Economic Expansion has established three kinds of programs. First, it can help the private sector of the economy by offering incentives to industry. Such incentives lessen the costs of establishing new plants that will create new jobs in slow growth regions.

Second, the Department can take direct action aimed at helping the public sector of the economy in regions where growth is slower. Indeed, the less privileged provinces cannot compete with the wealthier provinces in developing components of the infrastructure such as schools, roads, water and sewage systems, electrical services, and other local developments. Such is the aim of the special area programs of the Department of Regional Economic Expansion.

The third kind of program established by the Department is aimed at improving the social adjustment of people living in slow growth areas and regions. Through its industrial incentives and special area programs, it can contribute to economic growth and to the improvement of public utilities. However, special measures are often needed to help people benefit from the new opportunities and adjust to their new way of living. The Department has several means of achieving this purpose. It uses its Newstart vocational training programs to help people who are particularly disadvantaged; it also makes use of a certain number of measures under the ARDA and FRED programs.

It should be pointed out that in December 1970 Parliament passed amendments which increased and extended the incentives. For example, subsidies offered in the Atlantic Provinces were increased. Industries in certain regions of Quebec and Ontario, previously not included in the program, are now eligible for special grants. To encourage the establishment, expansion, and modernization of manufacturing and processing industries, the government not only offers grants but will also guarantee the repayment of loans.





## Consumer and Corporate Affairs

In December 1967, the Department of Consumer and Corporate Affairs was created to serve the interests of the Canadian consumer—whose demand for goods and services is the foundation of our economy—as well as to foster a climate in which business can prosper in a free market system. Canada then became the only country in the world with a single department of national government that brings together under one cabinet portfolio the inter-related consumer protection programs, the corporation-regulating functions of the government, and the policies to ensure the maintenance of internal competition.

The Department of Consumer and Corporate Affairs has three distinct units: the Bureau of Consumer Affairs, the Bureau of Corporate Affairs, and the Office of the Director of Investigation and Research under the Combines Investigation Act.

The Bureau of Consumer Affairs was created to promote the welfare of consumers, and help Canadians to be more discriminating consumers. In fulfilling this responsibility, the Bureau promotes the protection of the consumer against fraud and deception in the marketplace and against unsafe or hazardous products. It strives to increase the effectiveness of the consumer's choice by ensuring that he can rely on the information he is given in the marketplace. It also strives to stimulate a free flow of complete and accurate information from business and government about goods, services, prices, and trade practices.



Included in a total of 668 employees are many engaged in retail inspection services in 27 municipalities across Canada. The Bureau also has five regional offices, in Halifax, Montreal, Toronto, Winnipeg, and Vancouver, each with a consumer consultant to assist in solving the problems of Canadian consumers. In addition, the Bureau maintains a mailing address, The Consumer, Box 99, Ottawa, where consumers may write for assistance with their complaints, and for answers to their enquiries, or to offer suggestions.

In summary, the functions of the Bureau of Corporate Affairs are (1) to facilitate the use of the corporation in private enterprise while providing proper safeguards for creditors and investors; and (2) to encourage innovation by providing protection for intellectual and artistic creation. The principal statutory instruments for (1) are the Canada Corporations Act and the Bankruptcy Act, and for (2) the Patent Act, the Copyright Act, the Industrial Designs Act, and the Trade Marks Act.

The Combines Investigation Act promotes the maintenance of free and open competition as a stimulus to the achievement of maximum production, distribution, and employment in a system of private enterprise. In carrying out his duties, the Director of Investigation and Research enquires into combinations in restraint of trade and mergers and monopolies detrimental to the public. He also investigates unfair trade practices involving price discrimination, disproportionate promotional allowances, misleading representation of prices, false and misleading advertising, and resale price maintenance. The Restrictive Trade Practices Commission reports to the Minister upon enquiries in which statements of evidence are submitted to it by the Director of Investigation and Research. The Attorney General of Canada takes enforcement action in the courts based upon these enquiries.



# External Relations

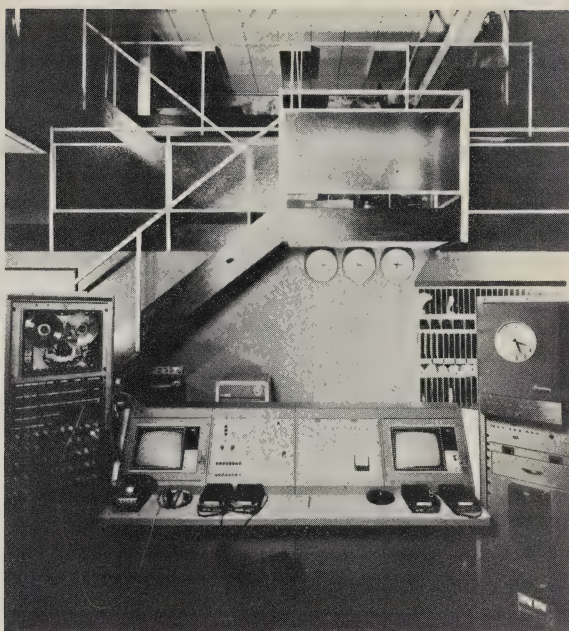
## The Department of External Affairs

Established in 1909 and headed by a minister styled Secretary of State for External Affairs, the Department of External Affairs, has three main purposes: 1) to provide information and advice to the Government on issues of foreign policy; 2) to foster understanding of Canada and its people by other governments and nations; and 3) to provide service to Canadian travellers and foreign citizens abroad.

In December, 1970, Canada had diplomatic, consular and/or trade representation in 121 countries. (The asterisk denotes non-resident representation and the country shown in parentheses is that in which the accredited Canadian representative resides.)

*Afghanistan (Pakistan)	Germany	Norway
*Algeria (Switzerland)	Ghana	Pakistan
Argentina	Greece	*Panama (Costa Rica)
Australia	Guatemala	*Paraguay (Argentina)
Austria	*Guinea (Senegal)	Peru
*Barbados	Guyana	Philippines
(Trinidad and Tobago)	Haiti	Poland
Belgium	Holy See	Portugal
*Bolivia (Peru)	*Honduras (Costa Rica)	*Romania (Yugoslavia)
*Botswana (South Africa)	Hong Kong	*Rwanda (Democratic
Brazil	*Hungary (Czechoslovakia)	Republic of the Congo)
Britain	*Iceland (Norway)	*San Marino (Italy)
*Bulgaria (Yugoslavia)	India	Senegal
*Burma (Malaysia)	Indonesia	*Sierra Leone (Nigeria)
*Burundi (Democratic	Iran	Singapore
Republic of the Congo)	Iraq	*Somali Republic (Ethiopia)
Cameroun	Ireland	South Africa
*Central African Republic	Israel	Spain
(Cameroun)	Italy	*Sudan (United Arab
Ceylon	Ivory Coast	Republic)
*Chad (Cameroun)	Jamaica	*Swaziland (South Africa)
Chile	Japan	Sweden
China,	*Jordan (Lebanon)	Switzerland
People's Republic of	Kenya	*Syrian Arab Republic
Colombia	*Korea (Japan)	(Lebanon)
*Congo, People's Republic	*Kuwait (Iran)	Tanzania
of (Democratic Republic	Lebanon	Thailand
of the Congo)	*Lesotho (South Africa)	*Togo (Ghana)
Congo, Democratic	*Libya (Tunisia)	Trinidad and Tobago
Republic of	*Luxembourg (Belgium)	Tunisia
Costa Rica	*Malagasy Republic	Turkey
Cuba	(Ethiopia)	*Uganda (Kenya)
Cyprus	Malaysia	Union of Soviet
Czechoslovakia	*Mali (Senegal)	Socialist Republics
*Dahomey (Ghana)	*Malta (Italy)	United Arab Republic
Denmark	*Mauritania (Senegal)	United States of America
*Dominican Republic	*Mauritius (Tanzania)	*Upper Volta (Ivory Coast)
(Venezuela)	Mexico	*Uruguay (Argentina)
*Ecuador (Colombia)	*Monaco (France)	Venezuela
*El Salvador (Costa Rica)	*Morocco (Spain)	*West Indies, Associated
Ethiopia	*Nepal (India)	States (Trinidad
*Fiji (Australia)	Netherlands	and Tobago)
Finland	New Zealand	Yugoslavia
France	*Nicaragua (Costa Rica)	*Zambia (Tanzania)
*Gabon (Cameroun)	*Niger (Ivory Coast)	
*Gambia (Senegal)	Nigeria	

Officers in the Operations Centre in the Department of External Affairs monitor all departmental telegrams, Canadian and other wire-service copy, radio and television broadcasts, and prepare digests at dawn of events during the night.



Canada is also represented on International Commissions for Supervision and Control in Indo-China. It has Permanent Missions to the United Nations in New York and Geneva; the European Economic Community, the European Atomic Energy Community and the European Coal and Steel Community in Brussels; the Organization for Economic Co-operation and Development, and the United Nations Educational, Scientific and Cultural Organization in Paris; the International Atomic Energy Agency and the United Nations Industrial Development Organization in Vienna; the North Atlantic Council in Brussels; and the Conference of the Committee on Disarmament in Geneva.

### **Canada and the United Nations**

It is a basic premise of Canadian foreign policy to continue actively to strengthen the United Nations as an effective instrument for international co-operation and, in particular, to improve its capacity to discharge its charter responsibilities. To this end eleven major policy objectives have been defined: contributing to social and economic development; working to stop the arms race; promoting peacekeeping and peace-making through the United Nations; reconciling Canadian objectives in southern Africa; taking measures to prevent further deterioration in the human environment; promoting international co-operation in the peaceful uses of satellite systems; promoting international co-operation in the use of the seabed beyond the limits of national jurisdiction; promoting observance of human rights, including adherence to and respect for various United Nations



conventions, contributing to the progressive development and codification of international law; projecting Canada as a bilingual country within the United Nations context; contributing to the institutional development of the United Nations as a centre for harmonizing the actions of nations. Canada maintains Permanent Missions to the United Nations in New York and Geneva, and a Bureau of United Nations Affairs in Ottawa provides advice and co-ordinates the implementation of Canadian policy towards the UN.

Canada participates directly in most of the specialized agencies of the UN of which one is located in Canada, the International Civil Aviation Organization (ICAO) in Montreal. Canada is the eighth highest contributor to the regular budget of the UN, and in the first 25 years of the organization's existence Canada has contributed \$460 million to its activities.

### **Canada and the United States**

For Canada, no other country equals the importance of the United States. Canadians and Americans are continuously involved with each other at all levels—governmental, corporate and personal. It is doubtful that there are any other two countries in the world whose relationships with each other are as intimate. Because the points of contact are so constant and so all embracing it is inevitable that differences and frictions do occur from time to time; the wonder is that they do not occur more frequently. The relationship is one of friendly discussion and compromise, and this can be largely attributed to the willingness of both countries to work together in joint organs of consultation and to the openness of the border between them.

The two countries conduct much of their everyday business through permanent bilateral organizations, such as the International Joint Commission. The IJC has come to be the focus of joint endeavours to deal with pollution and problems of the environment along the Canada-United States border. There are similar permanent organizations in such areas as defence co-operation (the Permanent Joint Board on Defence, established in 1940), and scientific research. Canadian and American legislators meet every year in the Canada-United States Inter-Parliamentary Group to discuss, in an off-the-record manner, matters of common concern. Canada's relations with the United States are especially important in the field of trade and economic affairs and, here too, there are annual Cabinet-level meetings to discuss bilateral issues in trade and finance. To state merely that Canada and the United States are each other's biggest customer and supplier does not adequately convey the magnitude of the economic relationship. In 1969 Canadian exports to the United States totalled \$10,500 million, accounting for approximately 72 per cent of the total. The exports of the United States to Canada were about \$9,500 million, which was 25 per cent of their total.

### **Canada and the Commonwealth**

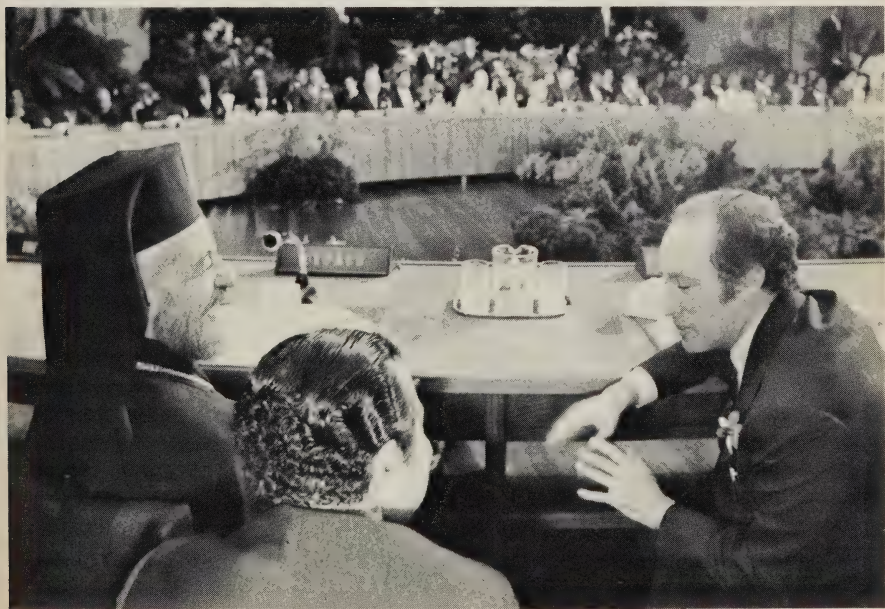
Canada has long been an active member of the Commonwealth which has evolved significantly in size, shape, and outlook in recent years. Today it is composed of 31 freely associated sovereign nations. Commonwealth countries cover

about one quarter of the earth's land surface, represent approximately 850 million people of many races, colours, creeds and languages and include economically developed and developing members as well as governments committed and uncommitted to international power groupings.

Canada views the Commonwealth as a unique and extensive association linking nations from six continents and five oceans, and capable of exerting a beneficial influence for international peace and progress. In a world increasingly divided between developed and developing nations, and along racial lines, and tending towards organization on a regional basis, the Commonwealth serves to help bring a global perspective to bear on many major international issues. Shared values and traditions derived from historical experience permit an informality of encounter between Commonwealth leaders and officials which gives the Commonwealth a unique character. In general, relations between Commonwealth countries are motivated by a spirit of friendship and understanding and characterized by the desire to consult and co-operate where possible in the interests of political, economic, and social development.

Commonwealth developing countries continue to receive considerable sums of Canadian assistance through the Colombo Plan, which now includes non-Commonwealth countries, the Special Commonwealth African Assistance Plan (SCAAP), and the Canadian program for Commonwealth Caribbean assistance.

Prime Minister Trudeau at the Singapore meeting of Commonwealth heads of government.



Canada's total allocated contribution under the Colombo Plan from its inception in 1951 to March 1971 is approximately \$1,370 million. Canadian allocations to SCAAP from 1960 to March 1971 total more than \$179 million, while approximately \$107 million has been allocated to Commonwealth Caribbean countries since 1966. Canada has contributed \$11 million since 1957 to the Commonwealth Scholarship and Fellowship Plan, which in the 1970-71 academic year sponsored 232 students, mostly from the developing countries, for study in Canada. During 1970 in the fields of education and technical assistance Canada provided 1,330 Canadian teachers and experts to assist developing countries of Southeast Asia, Africa, and the Caribbean area, of which 713 were assigned to Commonwealth countries.

### **Relations with the Commonwealth Caribbean**

The present close relationship between Canada and the Commonwealth Caribbean is a logical progression from the historical ties existing between the two areas. Trading relations over several centuries have been close, and have been supplemented by considerable Canadian commercial interests and investment in the area. Common association in the Commonwealth bond has also contributed to understanding through mutually shared traditions, institutions, and values. These factors have all contributed to increased communication between the two areas. In the past few years this communication has been emphasized through the large movement of people between the West Indies and Canada as tourists, students, businessmen, and immigrants.

The extent and complexity of Canadian interests in the area, both governmental and private, continue to develop. At present it is estimated that there is \$450 to \$550 million in Canadian investment in the region. During 1970 Canadian exports reached \$134.1 million as compared to \$113 million in 1969 and imports totalled \$77.9 million as compared to \$108.7 million in 1969. In the past five years over \$100 million has been allocated to the Commonwealth Caribbean under the Canadian development assistance program, including \$24.0 million in the 1970-71 fiscal year. At present there are over 3,000 Canadians living as permanent residents in the region and over 125,000 Canadians visit the islands annually. During 1970 nearly 14,000 West Indians immigrated into Canada.

### **Canada and Europe**

While Canadian interest in most areas of the globe is increasing, Canada's relations with Europe remain of special importance. They are deeply rooted in Canada's origins, springing from the common cultural heritage which is shared with Britain and France and also reflecting the ties with other European countries from which Canada's population is derived. These relations contribute to the richness of Canada's national life and to the diversity of its links with the outside world. They have been strengthened by Canada's substantial participation, on European soil, in two World Wars and by Canada's continuing stake in European security in the interests of international peace.

Canada maintains close and extensive bilateral relations with Britain and





In May 1971 Prime Minister Trudeau and Premier Kosygin signed the U.S.S.R.-Canada Protocol on Consultations.

France in particular, as well as with most other west European countries, and it has resident diplomatic missions in almost all of them. Britain and, to a lesser extent, several western European countries have been among Canada's major partners in external trade and have been its chief source of immigrants. As a result of its growing prosperity, dynamism, and unity, western Europe will undoubtedly assume increasing importance in Canada's external relations.

In recent years, Canada's relations with the Communist countries of eastern Europe have developed considerably. The large-scale Canadian wheat sales there after 1963 were followed by the growth of exchanges in many fields during periods of general relaxation of international tensions in Europe. Canada regards the development of mutually advantageous relations and exchanges with these countries as an important contribution toward better East-West understanding and the ultimate goal of a European settlement.

### **Canada and the Middle East**

The Middle East has been a focus of tension and conflict since the Second World War. During this period Canada has participated in the United Nations'

efforts to bring about calm and stability in the area. It has also contributed substantially to measures to alleviate want among the victims of the dispute.

Canada has been a leading contributor to the United Nations Relief and Works Agency for Palestinian refugees (UNRWA) since its establishment; Canadian support has taken the form of cash, food aid, and other supplies aimed at relieving human suffering in the Middle East. In emergency situations, Canada has also provided various forms of assistance through the International Red Cross.

Canadian officers continue to serve with the United Nations Truce Supervisory Organization (UNTSO) which maintains observers along ceasefire lines in the area. Canada was closely associated with the formation of the United Nations Emergency Force (UNEF), and Canadian officers served with this force in Gaza and Sinai from its inception until its withdrawal in May 1967.

### Canada and Africa

In the last decade, areas which once formed part of colonial Africa have become independent nations; during that same period Canada has established official relations with the African continent, associations strengthened by such events as the March 1971 visit by the Secretary of State for External Affairs to the Ivory Coast, Nigeria, the Democratic Republic of the Congo, Tanzania, and Zambia. Shortly

At the airport of Kinshasa, Democratic Republic of the Congo, the Hon. Mitchell Sharp, Minister of External Affairs, makes a brief statement to the press.



before, Canada received the President of Cameroun, Mr. Ahmadou Ahidjo, and the Prime Minister of Ghana, Mr. Kofi A. Busia.

Direct links were first set up with the former British colonies as they acceded to independence within the Commonwealth. Shortly afterwards Canada strengthened her bonds with French-speaking Africa, in order to express in her foreign policy Canada's cultural duality. At present, diplomatic relations are being maintained with almost all the independent African nations and there are Canadian missions in 11 countries on that continent. In early 1971 the opening of a Canadian mission in Algiers was announced.

Canada has continued to operate a wide-scale program of technical and economic aid which in the 1970-71 fiscal year provided Africa with almost \$125 million for the study and implementation of a large number of projects in most of the countries maintaining relations with Canada.

### **Canada and the French-Speaking Community**

In its concern to reflect the national character, the Canadian government has developed a policy over the last decade which is designed to give full expression in its international relations to the country's bilingual nature. Canada is by right a member of the vast community of countries which share the heritage of the French language and culture, and it is natural that Canada should take part in the activities of this community; since by so doing the government extends Canadian bilingualism into the sphere of international affairs, this has become a basic and permanent part of its policy.

The Canadian government would like to multiply and strengthen its ties with the countries in this community and increase the number of cultural and other exchanges with them. It has already set up many promising relationships with most of the 31 French-speaking countries: cultural agreements with France and Belgium, visits between parliamentarians, exchanges of students, public servants, and professors, the opening of many embassies in Francophone Africa since 1960, art exhibitions, and intensified programs of cultural and economic aid to developing French-speaking countries.

This is why Canada has taken an active part in the creation of the Agency for Cultural and Technical Co-operation of Entirely or Partially French-speaking Nations, which numbered 22 countries in 1971. The Canadian delegate, accompanied by participants from Quebec, New Brunswick, Ontario, and Manitoba, signed the agreement setting up the Agency on March 20, 1970, in Niamey. The first general secretary of the Agency is a Canadian, Jean-Marc Léger. Canada contributes 33 per cent of the Agency's budget, or \$550,000 in 1971, and participates in all its programs, which include international film festivals, youth meetings, discussions and seminars on the distribution of books, tourism, promotion of handicrafts and various initiatives related to training and educational and scientific research. Canada has participated in the Agency's establishment of an international centre for training in management techniques and has organized training sessions in Canada; in short, Canada has undertaken a whole range of initiatives designed to deepen mutual understanding among the member countries. Finally, Canada hosted the second general conference of the Agency in the fall of 1971.



Since 1968 Canada has been participating in the Conferences of Education Ministers of French-speaking nations of Africa and Madagascar. In 1970-71 Canada budgeted \$64.22 million for bilateral aid programs for French-speaking African nations; during the same period, 481 Canadian teachers and 137 advisers were at work in Francophone Africa and 536 trainees and bursary students from these countries were studying in Canada. This growing and diversified interest in French-speaking nations reflects a priority in Canada's diplomatic activities, and the government's dynamic policy in this area indicates the importance Canada attaches to it.

## **Canada and Latin America**

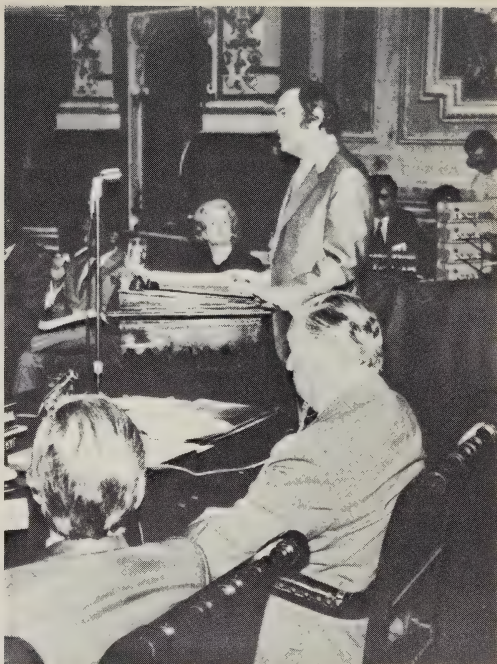
Canada has formal diplomatic relations with all the Republics of Latin America and now has 11 resident diplomatic missions in the region. Its political, cultural, and commercial relations with these countries have increased appreciably during the past few years.

Canada has been developing closer economic ties with Latin America as well. Trade missions of Canadian businessmen and government officials to Latin American countries have been promoted. Of particular importance, the Canadian Government has directly facilitated Canadian exports to Latin America through the long-term credits that it has provided for the export of capital goods under the Export Credits Insurance Act and the new Export Development Act. These credits now total some \$275 million.

In the area of development assistance the Canadian Government signed in 1964 an agreement with the Inter-American Development Bank by which Canada agreed to make available \$10 million on concessional loan terms to finance development projects in Latin America. Similar contributions were made in subsequent years and to date an amount of \$60 million has been provided. The funds are administered by the Bank on behalf of the Canadian Government. Later in the 1960's the Government, through the Canadian International Development Agency, instituted a program for the support of non-governmental organizations working in Latin America as well as other parts of the developing world. Such voluntary organizations as the Canadian University Services Overseas, the Canadian Executive Services Overseas, and missionary groups have been provided assistance under this program for projects they are carrying out in Latin America. In 1971, as a result of its comprehensive policy review dealing with Latin America, the Canadian Government initiated a program of bilateral technical assistance to the area. An initial allocation of about \$10 million was made for this purpose for the financing principally of projects in agriculture, education, and community development in selected countries. Also as a result of the Latin American policy review, the Government is studying ways and means of working more closely with the Inter-American Development Bank.

In hemispheric political relations, during 1971 Canada negotiated for permanent observer status in the General Assembly of the Organization of American States. Canada has been a member, for some time of four inter-American agencies (the Pan-American Institute of Geography and History, the Inter-American Statistical Institute, the Inter-American Centre of Tax Administrators, and the Centre for

The leader of Canada's observer delegation to the General Assembly of the Organization of American States in Costa Rica addresses a meeting of the assembly.



Latin American Monetary Studies), and regularly attends their meetings. During the past year, Canada negotiated for entry into four other inter-American agencies whose meetings it has previously attended as an observer (the Pan-American Health Organization, the Inter-American Institute of Agricultural Sciences, the Inter-American Conference on Social Security, and the Inter-American Indian Institute).

Of perhaps greatest importance for future strengthening of Canadian ties with Latin America was the decision in 1968 to conduct a thorough review of Canadian policy toward this region. The new foreign policy guidelines for Latin America were laid down during the course of 1970, upon completion of the review. The major conclusion reached in this study was that Canada should undertake a systematic strengthening of relations with Latin American countries both bilaterally and through the agencies of the Inter-American system and the UN. The Government is continuing its efforts to improve Canada's hemispheric relations in these ways in 1972.

### **Canada — Asia and the Pacific**

Although Canada has for many years maintained numerous links, both official and private, with countries of Asia and the Pacific, its interest in expanding its presence in this region is growing, as was demonstrated by the establishment of an Embassy in China (Peking) in 1971.



The Canadian ambassador presenting his credentials to Tung Pi-wu, vice chairman of the People's Republic of China.

Canada was a founding member of the Colombo Plan under which development aid in the form of loans, grants, and technical assistance is extended to a number of countries and it participates in the work of the UN Economic Commission for Asia and the Far East (ECAFE), including the Mekong Committee and the Asian Development Bank.

Through membership in the Commonwealth Parliamentary Association, the Commonwealth Foundation, and other similar organizations, Canada maintains useful links with the Commonwealth countries of Asia and the Pacific.

In addition to its diplomatic, commercial, and aid relations with countries of Asia and the Pacific, Canada has participated in peace-keeping in the Indo-China area since 1954 through its membership on the International Commissions for Supervision and Control in Vietnam, Laos, and (until the Commission adjourned on December 31, 1969) in Cambodia.

## Arms Control and Disarmament

Canada has long played an interested and concerned role in international negotiations on arms control and disarmament issues. As a member of the United Nations Conference of the Committee on Disarmament (CCD) in Geneva, Canada has been able to participate in discussions and efforts to achieve agreement on various issues. On February 11, 1971, along with many other countries, Canada signed a treaty which was the result of two years of work in the CCD and which will prohibit the emplacement of nuclear weapons and other weapons of mass destruction on the seabed. Currently, the CCD is considering ways and means of prohibiting the development, production, and stockpiling of chemical and biological agents of warfare and measures to prohibit the underground testing of nuclear weapons. Canada's ultimate objective in disarmament negotiations in the United Nations and elsewhere remains the achievement of general and complete disarmament under effective international control.



## Foreign Policy and Defence

In consonance with basic foreign policy objectives, Canada's defence policy is designed to assure the protection of Canadian sovereignty and contribute to the maintenance of world peace. Canada rejects a non-aligned or neutral role in world affairs, and participates in collective security arrangements with other states in the interests of Canadian national security and in defence of values shared with Canada's friends. In addition to conducting surveillance of its own territory and coastlines, Canada co-operates with the United States in the defence of North America through the North American Air Defence Command (NORAD), and in other ways. To the extent feasible, activities in Canada essential to continental defence are carried out by Canadian forces.

Canada continues to be a member of the North Atlantic Treaty Organization (NATO), along with the United States and most of the countries of western Europe. The stabilizing influence of NATO reduces the likelihood of a world nuclear conflict originating in Europe, where the vital interests of the two major powers are involved. Canada also attaches importance to NATO's role in fostering measures of political accommodation and arms control between East and West. Besides participating actively in NATO's political activities, Canada contributes militarily to the Alliance, although as a result of the increased ability of western European countries to provide for their own defence, the size of Canadian forces in Europe has been reduced from about 10,000 men to 5,000 men. Canadian activities in continental defence also constitute a contribution to NATO, as North America is part of the North Atlantic Treaty area.

As a responsible member of the international community, Canada also considers it desirable to have forces available for UN or other international peace-keeping roles. At the present time there are more than 600 Canadian officers and men serving the United Nations and the International Control Commissions in countries around the world.

Permanent delegates of the North Atlantic Treaty Organization council.



## National Defence

The control and management of all matters relating to National Defence, the Canadian Armed Forces, the Defence Research Board, Defence Construction (1951) Limited and the Canada Emergency Measures Organization are the responsibility of the Minister of National Defence. The present organization of the Canadian Forces evolved initially from the integration and subsequently the unification of the three armed services. In 1965-66 an integrated command structure for the field forces was established. The four Army regional commands, the two Navy regional commands, and the five Air Force functional commands were replaced by five major functional commands: Mobile Command, consisting of land and tactical air forces; Maritime Command; Air Defence Command; Training Command; and Air Transport Command. In addition in 1970 all Commands except Air Defence Command were directed to support regional services in co-ordination with local government authorities.

Plans for restructuring the Armed Forces have had to be revised because of recent changes in defence policy and the decision to maintain the defence budget for the next three years at \$1,815 million which means that defence expenditures as a percentage of the Gross National Product are expected to decline from the 2.2 per cent level of 1970 to 1.9 per cent in 1973. Decisions on the structure of the forces have affected or will affect all commands to some extent. The major decision is a planned reduction in manpower. The manning level of the forces has been reduced progressively over the past five and a half years. In 1964 the total strength was approximately 120,000; in 1965 it was 112,000; in 1966, 106,000; in 1967, 104,000; in 1968, 100,000; and in 1969, 97,000. By 1973, it is planned to have a total strength of approximately 82,000.

Mobile Command, as the primary user of manpower, has been affected the most. This Command was restructured from five Combat Groups (averaging 4,000 men each) to three somewhat larger Combat Groups plus a small training group in Canada. Tactical air support of Mobile Command is provided by CF-5 aircraft which are now in service. The final configuration of the CF-5 force is still under consideration.

In Europe, the previous Mechanized Brigade Group and the Air Division were brought under the command and control of a single Commander of the Canadian Forces (Europe) on July 1, 1970 and both are located in the southern region of Germany. The land force, reorganized as a Mechanized Combat Group for the interim period until 1973, is now tasked by the Central rather than the Northern Army Group. The proposed post-1973 configuration will be air mobile, making it more compatible with the rest of the Combat Group in Canada, from the point of view of organization, equipment, and training. The Air Division has been reorganized as one Canadian Air Group (CAG) and consists of one reconnaissance and two strike/attack squadrons. After 1972, the squadrons will be equipped for either reconnaissance or conventional attack.

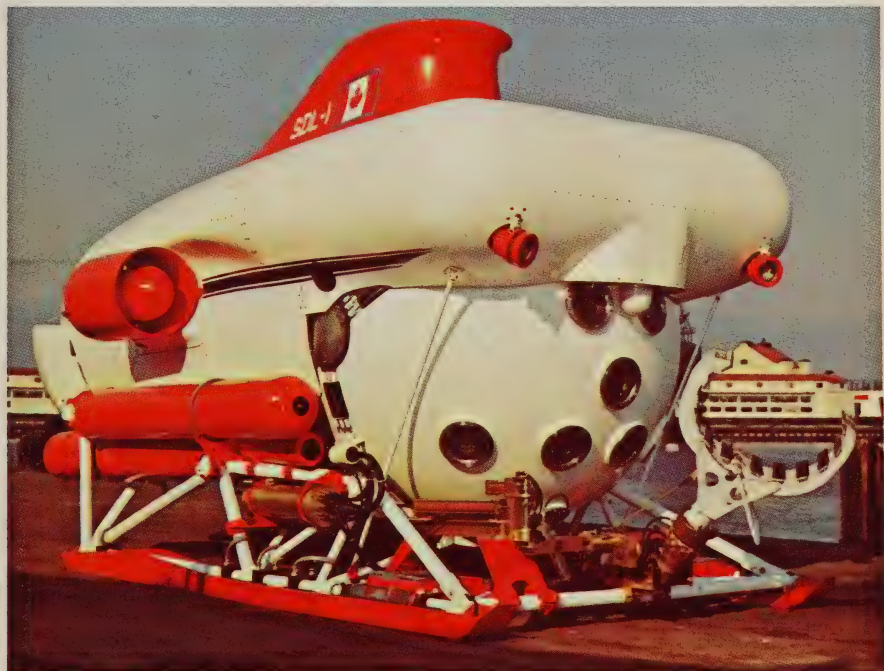
As a result of the Government's review of defence policy in 1969 new defence objectives for the North were identified. As one of the activities to attain these

objectives, Canadian Forces Northern Region is to co-ordinate Canadian Forces activities in the Yukon and Northwest Territories. Responsibilities associated with this role include direct liaison with the Commissioners of the Yukon and Northwest Territories and other government departments and civil agencies.

Modernization of existing destroyers will be completed by 1972. At this time, also, the first of four gas turbine equipped destroyers will become operational. The fleet will then have reached the intended "mix" of destroyers with helicopter capabilities and destroyers with modernized sensors and weapons systems. The building program which introduced modern support ships into the forces has been completed.

Significant areas of development are in the antisubmarine sphere. A hydrofoil evaluation program is in progress to test this vehicle as a sensor and weapon platform. New long-range maritime patrol aircraft are being considered to replace existing machines.

This submersible diver, which is manned by a crew of six (of which three are divers), was built for the Canadian armed forces.







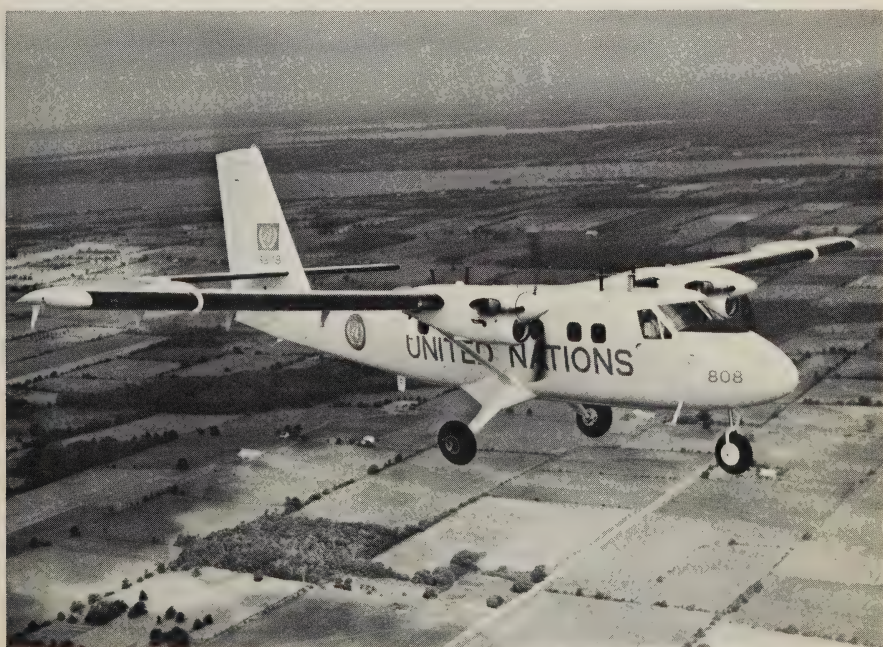
Winter training in the Arctic and in Suffield, Alta.



The re-equipping of land forces with a family of light-weight tracked vehicles and a family of observation, reconnaissance, and transport operational helicopters and light over-snow vehicles is continuing. Finally, the air forces have been provided with tactical transport aircraft and more recently four Boeing 707 jet transport aircraft. In addition, there are an interceptor jet modernization program and plans for the future acquisition of utility transport helicopters.

Canadian military assistance to other nations is embodied in two programs: Military Training Assistance and Mutual Aid. Military Training Assistance provides aid to developing Commonwealth nations and to some selected francophone and Pacific rim nations. Training Assistance programs provide no material, but concentrate on pilot training, officer training, and staff training. Currently 11 nations are benefiting from Canadian military assistance: 19 Canadians are serving on training teams in four other countries and 45 officers and men of other nations are receiving training in Canada. Mutual Aid provides training, mostly of pilot aircrew, to Canada's NATO partners on a cost recoverable basis. Canada will train Danish and Dutch student pilots during the 1971-72 period. In addition, the Department of National Defence provides training to countries that purchase military equipment through other government departments.

A Twin Otter in the service of the United Nations belongs to the Canadian Forces Air Transport Command. Its 8-man crew supports the UN Military Observer Group in India and Pakistan.





## Canadian International Development Agency

Although Europe and the Middle East received Canadian relief assistance after the Second World War, Canada really became involved in international development assistance in 1950 when it became a founding member of the Colombo Plan. The Plan was established to help the newly independent states of South and Southeast Asia and this is still one of Canada's major areas of foreign aid concentration with a total allocation over the past 20 years of approximately \$1,200 million.

In the past ten years the flow of Canadian resources has broadened to include both technical and capital assistance to some 70 countries in Africa, the Caribbean, Asia, and Latin America. Canada's allocations for international development have increased more than fivefold from \$65.4 million in 1963-64 fiscal year to \$365 million for 1970-71, excluding loans made by the Export Development Corporation to help developing countries purchase equipment from Canadian companies.

Mount Olivet School is one of a hundred prefabricated schools being built by Canada for the Government of Jamaica.





A Canadian machine shop and industrial arts teacher at Singapore's Vocational Institute makes sure his student's calculations are accurate.



During 1969, CIDA undertook a comprehensive review of Canada's policies in the field of international development assistance as part of an over-all review of Canadian foreign policy. Based on the findings of this review, the Government of Canada has confirmed its commitment to the support of international development.

Canadian bilateral aid is extended mainly in the form of goods and services. The principal recipients are India, Pakistan, Ceylon, Malaysia, Nigeria, Ghana, and Francophone Africa, Latin America, and the Commonwealth Caribbean. Various kinds of assistance are provided under Canada's bilateral aid program including capital programs which see the construction of schools, dams, roads, and transmission lines; commodity aid in the form of food, fertilizers, equipment, and raw materials for industry; and technical and educational assistance. Under the latter program Canada provided 200 advisers and 762 educators to developing countries in 1970 and provided training in Canada for 1,832 students from these areas.

About 20 per cent of Canadian aid is multilateral. Funds are given or loaned to support the development projects of such international agencies as the United Nations, the World Bank, the International Development Association, and a number of regional development banks.

Two new divisions have been added to the Agency recently. The Non-Governmental Organizations Division helps voluntary and non-government agencies increase their contributions to international development. In 1968-69 fiscal year, \$5 million was allocated to this program and that figure rose to \$8.5 million for 1970-71. It has been estimated that the total value of private assistance to developing nations from Canadian organizations is about \$35 million annually. Many of



Canadian experts examining the loading ramp up which logs are carried to the Khulna hard-board mill in East Pakistan.

these groups were pioneers in the development field, and are operating successful programs that can be expanded and strengthened with the additional support which CIDA offers them.

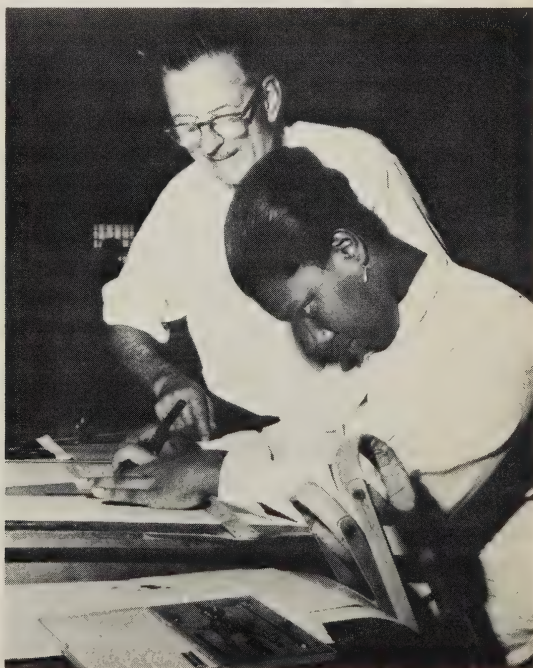
The Business and Industry Division was established to develop a program that would help Canadian companies begin or expand suitable overseas enterprises, thereby facilitating the transfer of know-how and investment funds into the private sector of developing economies. The Division works closely with Canadian business, the Department of Industry, Trade and Commerce, international finance corporations, and development banks and corporations overseas to identify and arrange financing for worthwhile investment opportunities in all types of secondary industry in the developing countries.

In the spring of 1970, Parliament gave final approval to a new initiative in international development work, the International Development Research Centre. First proposed in 1967 by the Rt. Hon. Lester B. Pearson, the Centre will focus advanced scientific and technological knowledge on the difficulties of the developing countries by sponsoring or conducting research designed to bridge the growing gap between science and technology. The Centre finances research wherever the most capable people and institutions are available, on such problems as mineral resources evaluation, food conservation and distribution, improvement of agricultural products and techniques, and the development of labour-intensive industry.

## Canadian Executive Service Overseas

Canadian Executive Service Overseas is an element of Canada's foreign aid program. Its purpose is to help people in developing nations to accelerate their rate of economic progress by providing them with technical and administrative guidance. Its method is to recruit Canadian specialists with a record of achievement in their chosen fields who are willing to act as advisers for up to six months, without fee or salary. These volunteers are sent overseas to guide and advise locally-owned enterprises that have requested CESO's participation in their activities and have accepted the particular volunteer recommended by CESO. Local representatives serving on a semi-volunteer basis across Canada facilitate the finding of qualified volunteers. Similar representatives in nearly 20 developing nations make known the work of CESO in their respective territories and help co-ordinate arrangements when volunteers are sought, dispatched, and on the job.

The principle on which CESO is founded is that all parties involved in an activity contribute in some way to its success. The Canadian Government through its Canadian International Development Agency makes a grant that pays CESO's operating costs and the travel expenses of volunteers en route to and from their assignments. The volunteers have interesting and rewarding experiences, in exchange for hard work in an environment that is often unfamiliar. Finally, the user-organizations pay the cost of maintaining the volunteers while they are on assignment, and are responsible for implementing their recommendations.



A CESO volunteer trains a student in the technique of paste-up in a printing plant in Kingston, Jamaica.



## Canadian University Service Overseas

CUSO began in 1961 and that year it sent 17 Canadians to work in four countries. Since then more than 2,500 Canadians have used the organization as a practical means of contributing to international development. Today, CUSO has some 1,200 people working in more than 40 developing countries in Africa, Asia, the Caribbean, and Latin America.

An independent, non-profit organization, CUSO is engaged in the placement of persons with specialized knowledge and technical skills in response to requests from overseas governments and agencies. It is viewed by them as a source of manpower for their continuing development programs. CUSO personnel range in age from 18 to 80, and in occupation from town planners to motor mechanics. Currently in greatest demand are teachers—especially in mathematics and science—nurses, doctors, medical technicians, engineers, and agriculturalists. All assignments are for two years.

CUSO personnel are usually paid at approximately counterpart, not Canadian, salaries. This policy, which enables overseas governments to devote their limited financial resources to other development tasks, is one of the features that distinguishes CUSO from the majority of other manpower resource agencies.

A CUSO doctor working in Uganda with his small patients at the Jinja Hospital.



A therapist working in India is a CUSO volunteer.



A major objective in the past two years has been decentralization, in recognition of the fact that both initial planning and actual administration are most effectively conducted in the field. CUSO now has 25 full-time and 8 part-time field staff officers.

CUSO draws on four major sources for direct and indirect financial support: the Canadian International Development Agency (CIDA), overseas governments and agencies, Canadian educational institutions, and the private sector. In 1969-70 the CIDA grant exceeded \$3,260,000, while the overseas governments contributed over \$3,500,000 in salaries and housing supplements. Indirect support, estimated at \$500,000, comes from such sources as universities and colleges providing office space, equipment, and staff for local recruitment and selection committees; the advertising industry; the mass media, which carry recruitment advertising free of charge; and the pharmaceutical and other companies that donate medical kits packaged by the Department of National Health and Welfare. Finally, an estimated \$420,000 comes from the private sector: it includes gifts from individuals, corporations, foundations, community and service groups, and the thousands of Canadians who participate in the "Miles for Millions" marches.

The total direct cost to CUSO of each volunteer was \$3,000 in 1969-70. Of this about 75 per cent was spent on recruitment, selection, training, transportation, allowances, health and insurance expenses, and on the maintenance of field offices. The balance was spent on administration.

# the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy

the economy



## Economics

Individuals and societies have many needs and desires. But the resources — the machinery, labour, land, savings, and enterprise — that can be used to satisfy these wants are strictly limited. Even in *relatively* affluent Canada there are very few people or organizations who could not use an extra thousand dollars. Hence the universal need for a system to ration the use of the resources of a nation or a household. Succinctly put, the economic system serves to determine what is to be produced, for whom, by whom, and how. Robert L. Heilbroner\* has pointed out that all of the systems that man has found for solving these problems can be categorized into three different types: tradition, command, and market. The first and most primitive is the economy of tradition. In such a society each person produces today what he produced yesterday, which is usually what was produced a hundred years ago by his grandfather. The techniques of production and the distribution of the product are held constant over time. By definition, societies of tradition are very stable, but they are incapable of coping with external change.

\*Robert L. Heilbroner, *The Economic Problem* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968).



Montreal is Canada's largest city and one of its busiest ports.

Historically, change from a tradition-based economy has usually been made possible by the emergence of a strong personage and his assumption of a position of command from which, once invested with the necessary authority, he could effect changes in the traditional solutions. Under the command system the ordinary citizen found that instead of repeating what he did previously he had to do what he was told to do. He also found that in the shift to a command economy there had been a shift in power from "the past" to the élite.

Canadians are, of course, familiar with traditional solutions and non solutions to many of their economic and social problems. They are even more familiar with the use of command to solve resource administration problems, especially within households and companies. In the main, however, the administration of Canada's resources is in the hands of "the market."

The market economy works something like this. Each person's basic resource is his time and energy, which are sold in the labour market for money on terms that are individually or collectively arranged with buyers. Income from labour is spent or saved, and savings (earned or inherited) can be sold in the capital market for additional income.

From the fruits of his labour (and maybe that of his ancestors) each individual (or household) then enters the commodity and service markets as a buyer. He wanders through stores, reads the ads and, with his income dollars, purchases this product or that. If he likes it—or is persuaded he likes it—he may purchase it again. Each customer has “free choice.”

Of course, consumers can only buy products that exist. Products and services are brought into existence (produced) by individuals or firms who are “enterprising.” These entrepreneurs must start with an idea of a product or service that they think will sell. They must then acquire capital resources—land, machinery, working capital, and so on—made possible by the savings (income which is not consumed) of themselves and others. These entrepreneurs and savers must be prepared to accept risks: they may not meet with the interest they had hoped for on the part of the consumer. Production is usually made in the anticipation of sales and these sales may or may not materialize.

The enterprisers who are successful and sell large quantities of their products will find their businesses profitable. They will be encouraged to produce more of these products and to expand their facilities (plow back profits or invest new savings). Other entrepreneurs are very likely to be persuaded to make similar investments in order to try to imitate their success.

On the other hand, enterprisers who have guessed wrong will incur losses which will force them to curtail production and perhaps go out of business altogether. In this simple way the coincidence of consumers exercising their free choice, enterprise, and the profit motive enables consumers to direct production. Of course there are many problems. The market system, like the systems of tradition or command, is far from perfect but it does provide a means of solving economic problems.

There is no serious attempt nowadays to maintain a pure market system however, and elements of command and tradition abound in the Canadian market economy. As a result, the economy is in fact, if not in theory, a much-modified market system. What one earns is mainly a function of the agreement one can reach with customers or with the organization for which one works, but the government has commanded that wages be no lower than some minimum figure and it similarly rules on condition of work, collective bargaining procedures, and so on.

In the main, it must be agreed that there is free choice. However, it is illegal to buy some drugs; advertising is regulated in various ways; hours during which goods are available may be prescribed, and so on. Generally it is left up to individual enterprise to supply goods and services, but external defence is provided collectively in market economy countries in just about the same way as it is in command economic systems.

Many other goods and services are produced by the government, either by departments like the post office, which is under the immediate control or command of the government, or by Crown corporations, such as the Canadian National Railways, which operate very much like public companies. Even in the private sector it would be virtually impossible to find a single product or service which is not subject to government regulation or influence.

One of the best ways of understanding Canada's economic system is to examine



some of its problem areas. It will be seen that solutions generally involve some mixture of law (command), the market, and the ever-present dead hand of the past (tradition).

One of the most talked about problems at the moment is pollution. This is an issue which is currently popular, rather than new. Pollution is a social cost which is all too often not the private cost of the person or organization causing the pollution. Differences between private and social costs have long been recognized as a problem of the market system and indeed of any other type of economy. One city's sewage flowing into the drinking water of the next city down stream is every bit as much a problem in command societies as it is in Canada. But the solution is fairly simple. There are two options. First of all a government can in some circumstances simply prohibit pollution, which means that the manufacturer and, ultimately, his customers must pay the full cost of producing a pollution-free product. Where this is not possible, or politically acceptable, the community may levy a "pollution tax" so that the pollution can be dealt with by the government on a collective basis. In some cases the revenue of the tax on polluters might be used to compensate the victims of pollution. Using either the prohibition or the tax approach should lead to a better, more rational market system. In the process the economy or the individuals or firms involved will not be ruined so long as *collective* action is taken. If one province or one municipality tried to place a new pollution tax on, say, a pulp and paper company when a similar tax was not imposed elsewhere in that industry, the result would simply be to drive that company out of business or to a new location where it would incur costs in line with those of its competitors. In many cases pollution has to be tackled nationally, and even internationally.

Another one of the most pressing current problems is undoubtedly the control of inflation and unemployment. To understand this problem it must first be recognized that every type of economy has a tendency to fluctuate. Even in static, traditional economies fat years were followed by lean ones. Command societies do have the power to control prices and wages—more or less—by controlling business organizations and unions. Unemployment can be disguised if not cured by simply preventing layoffs. However, these techniques for controlling inflation and unemployment enormously complicate the problem of effecting transfers of resources from one use to another. In the market system an attempt is made to use indirect means for keeping the economy growing with a minimum of inflation and unemployment.

Let us first consider unemployment. The cure for unemployment is, of course, more employment, and more employment will occur when businessmen, households, and governments buy more products and services. How then, in a time of unemployment, can more spending be encouraged? It must first of all be recognized that primary responsibility for counteracting the cycle must rest with the central government. A company, a household, or a local government that by itself tried to spend the economy out of a recession would simply end up in bankruptcy. Only a powerful central government with a considerable arsenal of monetary and fiscal tools has the power to lean against the wind of a recession without falling on its face.

The government can do a number of things to increase total income, expendi-

tures, and employment. The most obvious is to spend money itself on, say, public works. In this case the increase in employment is direct and the additional products and services will be determined by "the command" of the government. Alternatively the government can reduce taxes, leaving more income in the hands of the taxpayers. It can safely be assumed that a very large portion of this additional, after-tax income will be spent on capital or consumers' goods via the usual market mechanism involving consumers' choice and the profit and loss mechanism. Whether the government increases its own spending or reduces taxes, the result is very likely to be that its expenditures will exceed revenues so that a government deficit will result. This deficit will be financed, not by additional taxation which would be self defeating, but by creating new money or borrowing and putting to use funds that would otherwise remain idle.

Fiscal policy, which is what has been discussed, leads therefore to monetary policy—the control of the money supply and the rate of interest in order to limit unemployment and inflation. Through the Bank of Canada the government can cause the money supply to be increased. This additional money can be used for more government spending, or it may simply be made available to businesses and consumers through the banking system. Other things being equal, an increase in the supply of money will normally reduce the cost of its use (the interest rate) and therefore persuade households and businessmen to spend more money on (or hire more people to produce) hydro stations, factories, houses, cars, and so on.

The present state of economic knowledge suggests that there would be absolutely no trouble curing unemployment if it were not for the related problem of inflation. Unhappily many of the policies designed to increase spending and employment will also tend to exert an upward pressure on prices.

There is no easy solution to this quandary. There is an inverse relationship between inflation and unemployment. Years of significant price increase are years of relatively low unemployment. When unemployment is high, price increases usually constitute less of a problem. Unfortunately, it is not even a matter of making a simple choice between different combinations of unemployment and inflation. Economists are beginning to suspect that sustained periods of rising prices may create expectations of further price increases which get built into business and wage contracts. The result is that it will require ever-increasing amounts of unemployment to hold the rate of inflation to a given level. (In economic parlance this is referred to as an outward shift in the Phillips curve, which is just another name for the curve or function that shows the trade-off relationship between unemployment and inflation.)

In Canada at the present time in addition to the usual monetary and fiscal policies the federal government is trying to use public education and "moral suasion" and some rather more direct approaches to shift this curve back so that there can be less unemployment and less inflation. Moral suasion must persuade businessmen to make sure that higher profits are matched directly by lower prices. High profits would normally encourage businessmen to expand capacity and output. This in turn, would force down prices. The persuasion technique must aim at encouraging businessmen to make sure this process works promptly, or that high profits which, for some reason, are not used to expand output are used to reduce prices. Moral suasion must also persuade the unions and executives that if infla-

tion is to be avoided, wage and salary increases in the long run simply cannot exceed gains in productivity. Material welfare can be improved when and *only* when output is increased.

In other words real wages are dependent primarily on output and *not* on money wages. When money wages run ahead of output, the government is faced with a dilemma. To oversimplify, the government could decide to let the inflationary process run its course, and provide the necessary additional dollars so that the higher wage bill – the number of workers times their new higher wage rate – could be financed. This higher income would then bid up the prices of the given quantity of goods available, and the inflationary process would go on. On the other hand, the government could take a tougher line and say in effect that sufficient dollars would be provided to maintain employment at wages just sufficient to buy the nation's output at constant prices. Under this plan the money wage bill and the money income of the nation would be determined: there would be full employment as well as stable prices and wage increases which would buy the additional output resulting from higher productivity. On the other hand, with the total wage bill thus fixed, if some workers and executives demand and receive

Toronto, the second largest city in Canada, is also a Great Lakes port.





more than their share of income, dollars will simply not be available to hire all workers, and unemployment will result.

Here then is the real problem. Excessive wage and salary settlements (including executive salaries) must produce either inflation or unemployment or some of each. Must this painful unemployment course be taken or can wage and salary demands be talked down so that more employment and more price stability can be achieved? The Prices and Incomes Commission is at present seeking to steer the country along the less painful course.

Competition and its regulation are not the burning issue that pollution or inflation is, but the regulation of business is under continuing review, and it is an extremely important element of a market system. Competition means the existence of alternatives. Thus a competitive market is one which provides choices, and therefore freedom. Freedom can, in fact, be defined as the ability to choose from among alternatives: a man who has no alternative has no problem of choosing and no freedom. A competitive market not only provides choice and freedom but in so doing it effectively limits the power of each firm.

The classical economists were so taken with the idea of competition that in their text books they constructed a market in which there was "perfect competition" among a large number of small buyers and sellers. It is now recognized that such a market is unobtainable and not even desirable in most industries. For example, it would mean the loss of the lower costs that can be obtained in large and efficient manufacturing plants. It is also recognized that choice, like all good things, can be carried too far: each additional choice that is offered in the same market, for essentially the same product, may have a declining value. Indeed a point may be reached where yet another brand of soap to be priced and compared may be nothing more than a nuisance to the housewife.

Canadians tend to be quite pragmatic in their approach to competition. Generally, they favour freer international trade, which gives them the option of buying foreign products. They discourage price agreements. They have laws that would discourage mergers that go too far in removing the number of alternatives, and they are beginning to insist on the dissemination of more and better information about products and about the financial operating results of the companies that produce them. These last two points have been rather neglected, and yet they are absolutely essential to "consumer sovereignty." Adequate and accurate information about products is necessary if consumers are to choose their products wisely, and knowledge about the profits and losses associated with making products is necessary if businessmen are to be able to choose their investments in such a way as to expand the production of goods that are wanted and to avoid expanding facilities to make products that are not.

It is a characteristic of the Canadian economic system that attention tends to get focused on its problems. Perspective should not be lost however, nor should the accomplishments of the economy be forgotten. The average Canadian today lives a longer, a healthier, and in most respects a better life than did the nobleman of a few centuries ago.

## Economic Growth in 1970

The year 1970 witnessed some slowing down in the rate of growth of the Canadian economy. The aggregate value of Canada's production of goods and services rose by 7.5 per cent, to reach a level of \$84,500 million. This rate of increase was somewhat lower than that experienced in most recent years, except in 1967 when there was also some slackening in business activity. The implicit price deflator for the Gross National Product—a comprehensive measure of price movements for the economy as a whole—rose 4.1 per cent. Though smaller than the 4.7 per cent rise in 1969, this was still one of the largest annual price increases recorded in recent years. However, most of the annual increase was attributable to the momentum of rising prices at the beginning of 1970. In the course of the year there was deceleration in the rate of price increase. In real terms—in other words after discounting that part of the total value increase that reflects higher prices rather than greater volume—Canada's output of goods and services rose by 3.3 per cent. This compares with increases of 3.5 per cent in 1967 and of around 5 per cent in 1968 and 1969.

Fiscal and monetary policies adopted in 1969 apparently played a role in slowing down the growth of incomes and domestic demand in the first half of 1970 and at the same time contributed to the moderation of price advance. Some easing of these policies appears to have had an effect in the recovery of demand in the latter part of the year. The quickened pace of activity in the fourth quarter was noteworthy, especially in view of the fact that it occurred despite a major strike in the automobile industry through most of that period. A remarkable development in 1970 which contributed to the continued growth of the economy was the spectacular gain in exports realized in the first quarter and maintained through the remainder of the year.

The rise in prices showed a progressive deceleration as the year wore on. However, despite some indications of moderate productivity gains, there was no comparable evidence of a parallel decrease in cost pressure. The sharp decline in corporation profits reflected these underlying cost-price relationships as well as certain special factors, in particular numerous work stoppages and the effect on some export-oriented industries of the appreciation of the Canadian dollar, which resulted from the freeing of the exchange rate in the month of June. Employment increases were unusually small and insufficient to absorb the rapid rise in the labour force. As a result, the unemployment rate jumped from 4.7 per cent in 1969 to 5.9 per cent in 1970—its highest level since 1962.

Consumer spending continued to be an important element in explaining cyclical changes in aggregate demand. Personal expenditure on consumer goods and services rose by 5.3 per cent, compared with increases of between 8 per cent and 10 per cent in the previous few years. Not unexpectedly, the principal weakness occurred in the purchases of the more expensive durable goods items, where the consumer has the greatest scope for discretionary spending. Outlays on new passenger cars fell by 17 per cent. A steep decline in this component occurred in the first quarter; after recovering ground in the following two quarters, spending fell again in the fourth quarter, when sales were affected by the automobile strike.





St. James in Toronto. Renewal of city centres involves the construction of high-rise apartment buildings.

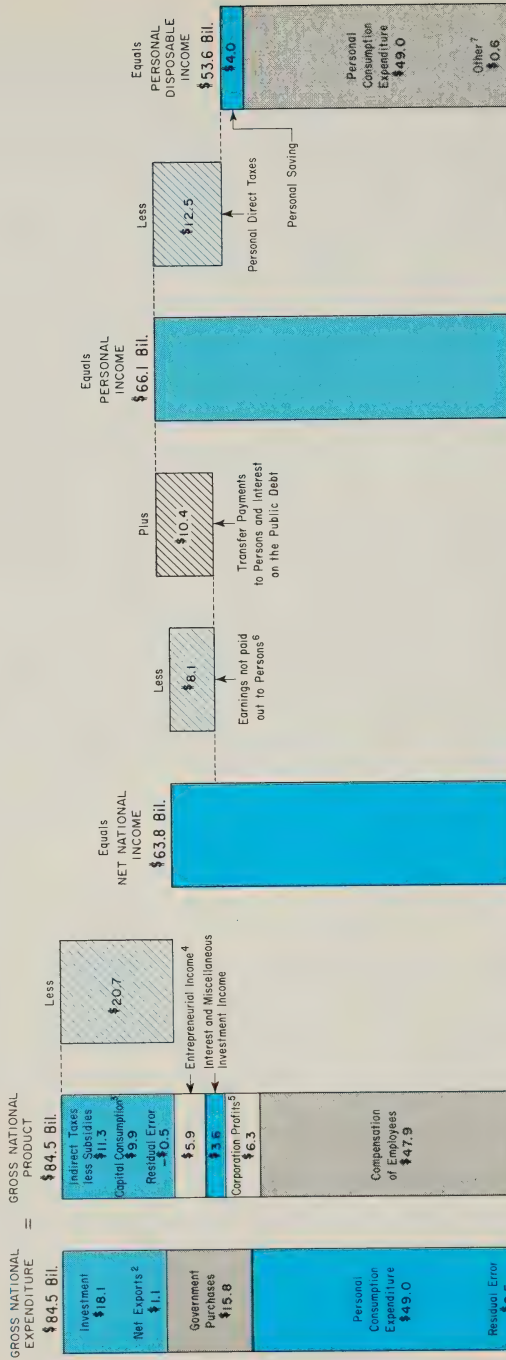
Among other durable goods, recreation equipment and home appliances also declined. Non-durables maintained a rate of advance similar to that in 1969, while semi-durables, especially clothing and footwear, and services showed notable decelerations. The slowdown in the services category was related to the further extension of the Medicare program which has the effect of shifting most medical expenses from the personal to the governmental sector.

High levels of mortgage interest rates in 1969 and early 1970 had an influence on investment outlays for new housing. New residential construction fell by 8 per cent in 1970. Starts of new residential structures fell abruptly in March 1969 and continued to slide down until May 1970. This was reflected, with a usual time lag, in strongly declining outlays in the latter part of 1969 and in the first two quarters of 1970. In response to the easing in mortgage markets since mid-year, and to the injection of federal mortgage funds for direct lending for low rental housing, especially in the fourth quarter, starts climbed sharply from July onward. This



# Relation between Gross National Product, Net National Income<sup>1</sup> at Factor Cost, Personal Income, Personal Disposable Income, and Personal Net Saving, 1970

- GROSS NATIONAL EXPENDITURE = GROSS NATIONAL PRODUCT is the market value of the total of goods and services produced by Canadian residents during the year.
- NET NATIONAL INCOME AT FACTOR COST is the total earnings of labour and property from the production of goods and services.
- PERSONAL INCOME is the total income received by Canadian residents from all sources.
- PERSONAL DISPOSABLE INCOME is equal to personal income less direct personal taxes and less other current transfers to governments; it is the income available to persons for consumption expenditure or saving.



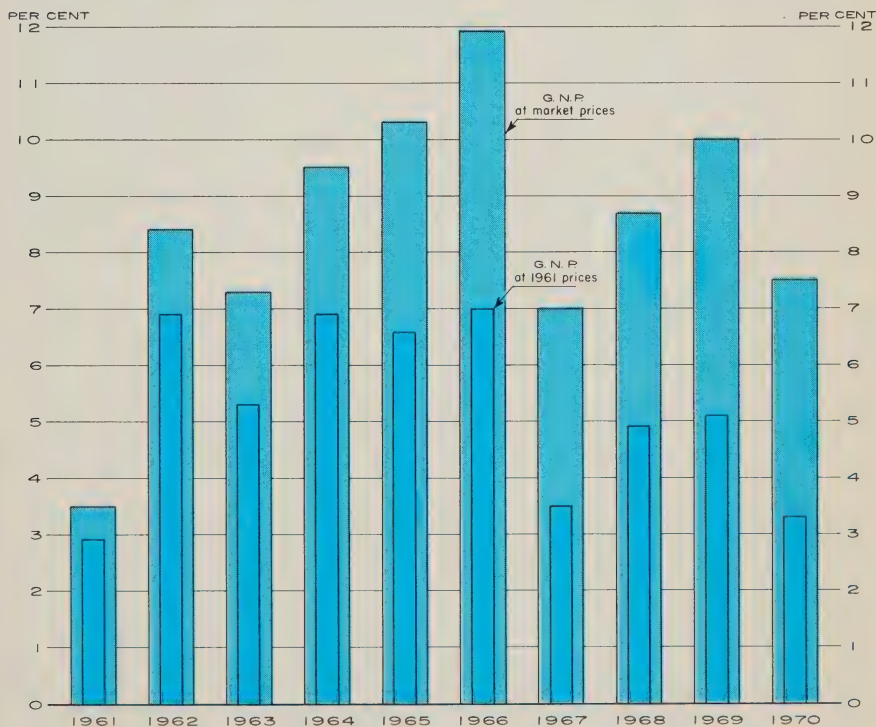
<sup>1</sup> AT FACTOR COST, I.E. AT THE COST OF THE LABOUR AND CAPITAL USED.  
<sup>2</sup> EXPORTS VALUED AT \$20,969 MILLION MINUS IMPORTS OF \$19,833 MILLION.  
<sup>3</sup> AND MISCELLANEOUS VALUATION ADJUSTMENTS.  
<sup>4</sup> INCLUDES ACCRUED NET INCOME OF FARM OPERATORS FROM FARM PRODUCTION AND NET INCOME OF NON-FARM UNINCORPORATED BUSINESS.  
<sup>5</sup> INCLUDING INVENTORY VALUATION ADJUSTMENT AND MINUS DIVIDENDS PAID TO NON-RESIDENTS.  
<sup>6</sup> CONSIST MAINLY OF UNDISTRIBUTED CORPORATION PROFITS, CORPORATION PROFIT TAXES AND GOVERNMENT INVESTMENT INCOME.  
<sup>7</sup> INTEREST ON CONSUMER DEBT AND PERSONAL REMITTANCES TO NON-RESIDENTS.  
 SOME COLUMNS DO NOT ADD BECAUSE OF ROUNDING.

rebound in starts showed up in a very sharp 12.7 per cent advance in outlays in the closing quarter.

Business fixed investment, excluding housing, rose by 8.0 per cent to a level of \$11,172 million. Despite falling profits and sluggish sales in domestic markets, the current results are only somewhat lower than the expressed intentions declared at the beginning of the year in the survey of business investment. Spending on non-residential construction was up by 10.1 per cent versus 5.1 per cent last year. Outlays on machinery and equipment rose at a lesser rate than last year—by 6.2 per cent rather than 11.1 per cent.

The bulk of the sharp decline in inventory investment was attributable to the farm component, which swung from an accumulation of \$503 million to a decumulation of \$178 million. The farm inventory movement reflected a sharp reduction in the value of the new crop, partly in response to the government "Lower Inventory for Tomorrow" program. It also reflected considerable declines in grain stocks in commercial channels, coinciding with rising grain exports. Investment in non-farm business inventories also declined somewhat. This was

**In 1970 the G.N.P. Increased by 7.5 per cent. With Prices Increasing by 4.1 per cent, the Gain in Volume was 3.3 per cent. Year-to-year Change**





Combines and windrowers awaiting shipment from Hamilton, Ont.

due largely to sharp depletions in the fourth quarter, especially in the stocks of motor vehicle dealers which were drawn down as a result of the automobile strike.

Strong foreign demand for Canadian goods and services provided by far the greatest stimulus to the economy. The gains were concentrated in the first quarter, when they accounted for practically all of the increase in total demand. Exports were thereafter maintained at only slightly lower levels than in the first quarter, resulting in a gain of 13.5 per cent for the year as a whole. The rise in 1969 was 10.5 per cent. In merchandise exports, increases were widespread but particularly notable in metals and in cereals. An unusual feature of this expansion was the altered direction of the flow of export gains. Exports to the United States, Canada's largest customer, increased very moderately, in line with the marked economic slowdown in that country, whereas exports to overseas countries, especially to the European Economic Community, to the United Kingdom, and to Japan rose spectacularly. In sharp contrast with exports, imports of goods and services rose by only 2.0 per cent. These developments in the external sector caused a huge swing of \$2,100 million in the balance on transactions in goods and services with non-residents, from a deficit of \$967 million to a surplus of \$1,136 million—the highest surplus ever recorded in Canada.

Rising government current expenditure on goods and services was another important sustaining force. This year's rise of 15.5 per cent was the highest since 1966. Almost half of the gain occurred at the provincial level of government, up 37 per cent, due largely to increased expenditures under Medicare programs. Expenditure by local governments and by hospitals also recorded sizable increases of over 10 per cent. The federal government's current expenditure on goods and services rose by 5.1 per cent.

On the income side, wages, salaries, and supplementary labour income made a substantial gain of 8.9 per cent. Though this increase was smaller than those recorded in recent years (when annual increases generally exceeded 10 per cent), it was nevertheless well ahead of the increase of 7.5 per cent in G.N.P. Higher average earnings accounted for most of the increase in labour income. With most of the increase in employment absorbed by service-producing industries, there was an accentuation of the tendency towards faster increases in this group than in goods-producing industries. In contrast, corporation profits fell by 6.2 per cent—



their first annual decline since 1967. Accrued net farm income also fell, by almost 20 per cent, due mostly to the smaller crop. Personal disposable income (personal income after tax and other deductions) rose at a slower pace than in any year since 1961, but because personal expenditure was even more sluggish, the personal saving ratio (personal saving as a proportion of personal disposable income) increased in 1970.

### Disposition of Personal Income, 1950, 1960, and 1968-70

Disposition	1950	1960	1968	1969	1970
(Millions of dollars)					
Personal expenditure on consumer goods and services:					
Durable goods .....	1,384	2,950	5,509	5,920	5,594
Semi-durable goods .....	1,743	2,781	4,567	4,992	5,119
Non-durable goods .....	5,022	9,487	16,443	17,931	19,410
Services .....	3,842	9,487	15,841	17,688	18,872
Total personal expenditure on consumer goods and services .....	11,991	24,705	42,360	46,531	48,995
Personal direct taxes and other deductions:					
Income taxes .....	612	1,979	5,922	7,469	8,779
Succession duties and estate taxes .....	66	158	235	237	257
Miscellaneous taxes .....	62	234	539	794	1,049
Employer and employee contributions to social insurance and government pension funds .....	237	657	2,090	2,341	2,420
Total personal direct taxes and other deductions .....	977	3,028	8,786	10,841	12,505
Other current transfers:					
To corporations .....	30	181	398	460	484
To non-residents .....	36	98	111	132	141
Total other current transfers .....	66	279	509	592	625
Personal saving .....	647	909	3,558	3,434	3,975
Personal income .....	13,681	28,921	55,213	61,398	66,100
Personal disposable income <sup>1</sup> .....	12,704	25,893	46,427	50,557	53,595

<sup>1</sup> Personal income less total personal direct taxes and other deductions.

### Source of Personal Income, 1950, 1960, and 1968-70

Source	1950	1960	1968	1969	1970
(Millions of dollars)					
Wages, salaries, and supplementary labour income .....	8,612	19,303	38,493	43,203	47,043
Military pay and allowances .....	154	559	860	898	906
Net income received by farm operators from farm production <sup>1</sup> .....	1,171	1,018	1,690	1,644	1,162
Net income of non-farm unincorporated business, including rent .....	1,699	2,797	4,218	4,410	4,551
Interest, dividends, and miscellaneous investment income .....	965	2,034	4,378	4,961	5,400
Current transfers:					
From government (excluding interest) .....	1,025	3,099	5,352	6,064	6,807
Charitable contributions by corporations .....	40	81	127	127	134
Personal remittances from non-residents .....	15	30	95	91	97
Personal income .....	13,681	28,921	55,213	61,398	66,100

<sup>1</sup> Excluding the adjustment to take account of accrued net earnings arising out of the operations of the Canadian Wheat Board.

## Industrial Growth

Early in the 1960's, the Canadian economy had rebounded from the relative stagnation which had marked the late 1950's. With few exceptions, the 1960's witnessed rates of growth approaching those achieved during the early 1950's. In the first year of the 1970's, there was a dampening of the rate of growth, reflecting to some extent the tightened monetary and fiscal situation introduced in the previous year. Nevertheless, considered over the total period, that is, from the first quarter of 1961 to the fourth quarter of 1970, real output has advanced by 67.2 per cent, or at an average quarterly rate of 1.3 per cent. By comparison, in the period of industrial expansion which began in the fourth quarter of 1957 and which peaked in the first quarter of 1960, total real output increased by 10.5 per cent, or by 1.1 per cent on an average quarterly basis.

The pattern of slow growth during the late 1950's, followed by substantial advances in output, was widespread among the major industries.<sup>1</sup> The exceptions were chiefly those that even during the period of general slowdown benefited from the introduction of new technology, new products, or new marketing techniques. Such, for example, were the industries producing petroleum and coal, the chemicals group, the public utilities, air transport, and the communications industries. There are also some industries, chiefly within the community, business, and personal service group, which expanded at a steady rate, relatively immune to cyclical change, mainly in response to such factors as the growth of population. During the 1960's and to date, these industries have continued to expand steadily. A few of the primary industries, such as agriculture, which are strongly influenced by external factors such as the weather, exhibited sharp fluctuations in annual output. This made it more difficult to define a clear-cut trend. However, the harvesting of several record grain crops during the 1960's and substantial sales of wheat abroad exerted a favourable influence not only on the agriculture industry, but indirectly also on the transportation and storage industries that handled the wheat, the grain-milling industry, which produced large quantities of flour for export, and so forth, down to the retailer who supplied the increased demand of the farm population.

The following Table shows average quarterly growth rates for all the major industry groupings for the period 1961 to 1970 and from the fourth quarter of 1957 to the first quarter of 1960. Particularly striking are the changes in output in such industries as construction and durable manufacturing. As can be seen from the Table, the 1.7 per cent average quarterly increase in the output of manufacturers of

<sup>1</sup> For the purpose of this article, wherever real output by industry is mentioned, "industry" includes agriculture, forestry, fishing and trapping, mining, manufacturing, public utilities, construction, wholesale and retail trade, transportation, storage, communication, finance, insurance and real estate, public administration and defence, and community, business, and personal service. Production represents the unduplicated output of individual industries located in Canada, as measured in 1961 dollars. Total production is the sum of the output of all the individual industries. The measurement of real output is difficult in some of these industry areas and labour input measures had to be used to represent output in some major industries. Consequently the measures may not be as sensitive to fluctuations as proper output measures would be.

durables since the first quarter of 1961 was the second highest for any major industry group. The above-average advance of the durable manufacturing component can in fact be said to be among the most notable features of the economy's performance since 1961.

### Quarterly Growth Rates<sup>1</sup>

	4th Q. 1957- 1st Q. 1960	1st Q. 1961- 4th Q. 1970
Real Domestic Product . . . . .	1.1	1.3
Goods-producing industries . . . . .	1.2	1.4
Agriculture . . . . .	0.7	0.9
Forestry . . . . .	3.5	1.2
Fishing and trapping . . . . .	-1.6	0.2
Mining . . . . .	1.7	1.6
Manufacturing . . . . .	1.4	1.4
Non-durables . . . . .	1.5	1.2
Durables . . . . .	1.3	1.7
Construction . . . . .	-0.5	1.2
Electric power and gas utilities . . . . .	2.8	1.8
Service-producing industries . . . . .	1.0	1.3
Transportation, storage and communication . . . . .	1.1	1.5
Transportation . . . . .	1.0	1.5
Trade . . . . .	1.1	1.3
Wholesale . . . . .	1.7	1.6
Retail . . . . .	0.8	1.1
Finance, insurance and real estate . . . . .	1.0	1.1
Community, business and personal service . . . . .	1.3	1.5
Public administration and defence . . . . .	0.5	0.7

<sup>1</sup> Based on the terminal years compound interest rate formula.

Since the first quarter of 1961 to the present, five industry groups have advanced more slowly than during the period from the fourth quarter of 1957 to the first quarter of 1960. One of these was electric power and gas utilities, which nevertheless was still the fastest growing industry group in the economy. The average quarterly rate of increase of mining was marginally lower than in the 1957-60 expansion. The deceleration in both electric power and gas utilities and mining appeared to be a phenomenon which brought the rate of growth of these two industries more in balance with that of the economy as a whole. Both industries had experienced exceptional expansionary pressures, during the earlier postwar years. Canadian mines were stimulated by a strong world-wide demand for their products, while a vast network of hydro-electric projects was needed to supply a growing population and an increasing industrialization. In addition, the tapping of Canada's natural gas resources in the western provinces, coupled with the construction of the trans-Canada pipelines, made it possible to use gas in the heavily populated urban areas of central Canada. All these developments had started from a relatively small base, and required large-scale capital investments which reached a peak in the 1955-58 period. The result was a surge in the output of the industry concerned as each new project became operational. These industries are strongly affected by technological innovations and change. But once these changes have been made, it is not surprising to see a gradual easing in the rate of growth.





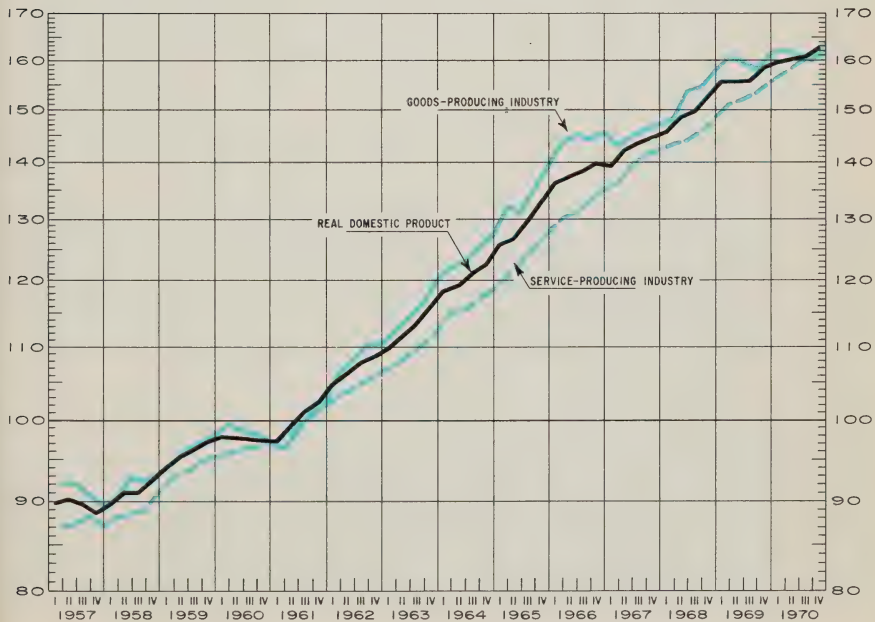
A Quebec lumberman measures the diameter of logs.

The explanation for the slower average quarterly growth rate to date in forestry in contrast to the 1957-60 period is to be found in the substantially depressed level of output in this industry by the end of 1957. The high levels of output during the earlier part of the 1950's had resulted in over-production and inventory accumulation. This, coupled with a drop in domestic and foreign prices during 1957, resulted in a sharp drop in output during that year.

The following chart illustrates the growth since 1957 in total real domestic product with a breakdown of the goods-producing and service-producing sectors. Since 1961 within the goods-producing industries, the durable manufacturing component has provided a prime thrust. The major factor behind this advance in the output of durables was the unprecedented increase in the production of motor vehicles and motor-vehicle parts, which by the end of 1970 had increased by 163.4 and 141.1 per cent, respectively, from the first quarter of 1961. Except for production stoppages due to labour disputes, motor-vehicle production advanced without major interruption until the second quarter of 1966 when output declined significantly. By the second quarter of 1967, motor-vehicle production had recovered from the 1966 setback with renewed vigour. The temporary decline in production of this industry both in Canada and the United States has been

variously related to changes in economic conditions in North America generally, and particularly to the tightening of monetary conditions, and the upward drift of prices. In addition, public concern about car safety has also been mentioned as a factor in the decline of car sales. Clearly, none of these factors offers a unique explanation. By the second quarter of 1967, improved consumers' confidence and liquidity had increased and a buoyant export market encouraged an increased production of motor vehicles. However, since 1968, various inhibiting factors such as strikes and shortages of parts have directly or indirectly checked motor-vehicle production. Production slumped sharply in 1970 in response to the softening in consumer demand reinforced by the impact of the automobile strike, an explanation for the first annual decline in total manufacturing output since 1958 and for the first annual standstill in the volume of retail trade since 1951. The iron and steel industry group has been another major contributor to industrial growth since 1961, increasing by 68.9 per cent since the first quarter of 1961. By 1965, however, it was operating at full capacity and thus this industry as well experienced some levelling off during 1966 and 1967. Since the end of 1967, the industry has made solid gains, if one deducts the direct or indirect negative effects of time lost in labour disputes in the latter part of both 1969 and 1970.

**Real Domestic Product, by Industry, by Quarters, Index 1961 = 100,  
Adjusted for Seasonal Variation**





A primary sub-station with transformers for a paper-maker in Gatineau, Que. Enormous amounts of energy are needed in paper plants.

The increase in the volume of construction has been a notable feature of industrial growth since 1961, despite strikes in 1969 and 1970. This activity first surpassed its 1958 peak in 1962. In the intervening period, the output of the construction industry had hovered around its 1957 levels, as the industry failed to recapture the momentum of the investment boom of the mid-1950's. Large-scale new investments both in social and industrial capital were made, however, during the mid-1960's. These investments reached a new high for that time in the first quarter of 1966. Large-scale investments in such industries as chemicals, pulp and paper, and in hydro-electric power development during the mid-1960's provided a boost to non-residential construction, as did the massive investments in social capital such as hospitals and particularly schools, which had to be built to accommodate the rapidly increasing school population. Construction activity was also spurred by projects commemorating Canada's Centennial in 1967 and by outlays for Expo 67. However, at this high level of activity, certain segments of the industry in some regions were straining against their available resources. Early in 1967, non-residential construction backed off from the rapid pace in 1966. The combination of strikes, scarce and costly funds, increasing costs, as well as the June 1969 deferral of capital-cost allowances on commercial projects in three provinces have all contributed to the levelling off of output in this sector.

The growing demand for housing, stimulated by the influx of people from rural areas and immigrants from abroad into the larger urban centres, and to some extent by the entry into the labour and housing markets of the first waves of the "baby boom" of the mid-1940's, resulted in a considerable expansion in residential construction, particularly during 1964 and in 1969, when house-building activity set new records. With this went a new emphasis on the construction of multiple-dwelling units. The rate of housing starts peaked early in 1969 and con-



tinued sliding until the final quarter of 1970, reflecting scarcity of mortgage funds, rising interest rates, and construction costs. The easing on the supply side was directly evident in the sharp increase in residential construction activity in the closing quarter of 1970.

Throughout the 1961-70 period, the service-producing industries have been a significant source of increases in the aggregate output of the Canadian economy. Transportation, wholesale trade, and the community, business and personal service industry groups all experienced above-average quarterly growth rates. Over the period as a whole, railway transport has contributed the major share of the gains in transportation, although the output of the air, pipeline, and interurban and rural bus transport industries grew more rapidly. In general, transportation played a vital role in meeting Canada's large and growing export commitments. This was clearly indicated by the upsurge in activity of the rail and water transport industries at the height of the grain deliveries to overseas countries during 1963 and 1964. In 1966 and 1969, critical components of the transportation group were severely affected directly and indirectly by strikes. 1970, however, was unmarred by serious labour difficulties and the transportation group advanced to a level well above the strike-depressed 1969 one, led by air and pipeline transport.

In summary, the Canadian economy since 1961 has experienced a period of reasonably sustained economic advance. Over the period as a whole, the vital manufacturing sector of the economy has exhibited strength, with increasing industrial diversification. Foreign demand for Canadian commodities remained high, with the result that exports increased their share of total output, particularly during 1970. Despite some weakening in 1970, consumer demand since 1961 has provided strong support for the gains in aggregate output. After a period of indecisive gains and losses extending through 1969 and part of 1970, over-all industrial output by the end of 1970 was showing some signs of renewed strength.

Zion Heights Junior High School, North York, Ont. Massive investments have been made in schools to accommodate the increasing school population.



## The Economic Council of Canada

The Economic Council of Canada, created by Parliament in 1963, is an independent advisory body. Its chief functions are (1) to define social and economic goals that Canada can *realistically* hope to achieve over, say, the next five to ten years; (2) to recommend to the federal, provincial, and municipal governments, as well as to private industry, the kind of policies most likely to help achieve these objectives, and (3) more generally, to try to anticipate future problems and advise on what actions can be taken now to deal with them.

In these respects the Council is designed to assist "forward planning" in all parts of the economy. But this aspect of its work should not be confused with the official government "plans" in certain European countries, for the Economic Council of Canada is purely an advisory body; it has no government representatives among its members, and no operational duties or authority. The Council comprises three full-time economists and 25 part-time members (from labour, business, finance, agriculture and other primary industries, and the public), and is assisted by a research staff of about 60. Under its terms of reference, the Council must publish annually "a review of medium- and long-term economic prospects and problems" and may also publish other studies and reports. In addition, the federal government may ask the Council to undertake various inquiries of an economic nature, and to date has done so twice: a 1965 reference dealt with the broad question of how to achieve reasonable price stability within a framework of other important economic goals, and more recently the Council has been reporting in stages on various aspects of combines and patent laws, and other government policies affecting competition in business and industry and the interests of the consumer.

### Basic Performance Goals

These are the central questions to which the Council has directed its attention since its inception. In doing so, it has kept constantly in mind the five basic economic and social goals embodied in its terms of reference: full employment, a high rate of economic growth, reasonable stability of prices, a viable balance of payments, and an equitable distribution of rising incomes.

Over the past seven years, the Council has sought to mesh the wide-ranging experience and practical judgements of its membership with the professional knowledge and competence of its staff (and also with outside experts in many fields) to perform certain key functions: (1) **Clarifying**, and to some extent quantifying, the basic economic and social goals embodied in its Act. (2) **Studying**, in increasing depth, the way in which the economy works—the sources of growth, the sources of economic instabilities, the country's changing industrial structure, the importance of Canada's international economic relationships, and so forth. (3) **Analyzing** the potentials for growth, within the framework of the basic goals mentioned above. (4) **Monitoring** certain key aspects of the economy's performance and assessing regularly each year the progress of the economy in relation to its potential. (5) **Advising** about policies, both government and private—and,



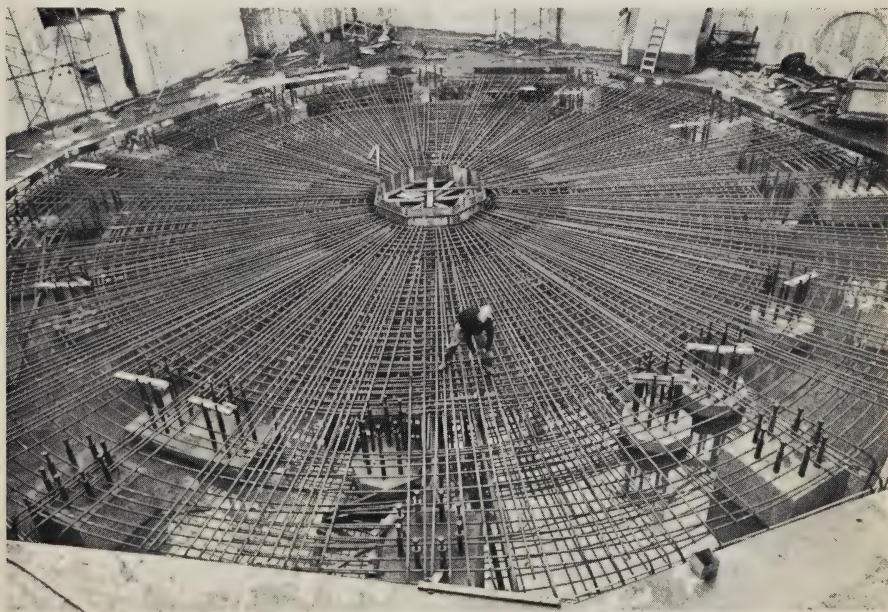
occasionally, about programs, institutional changes, information needs and other matters—relevant to achieving and sustaining good performance in relation to potentials and goals. (6) **Developing wider public understanding**, especially as a background for decision-making, about economic issues, problems, and policies.

### Key Elements in the Council's Policy Advice

Since the beginning of its work, the Council has recognized that in focusing its attention on performance goals, it is dealing with means and not ends. Successful attainment of strong, stable, and widely shared growth is not an end in itself. It would merely provide a basis for steadily increasing the resources available to Canadians, both individually and collectively, for meeting rising wants and aspirations. Such growth is essential in circumstances where hard choices must be faced in allocating limited resources to many escalating and competing claims upon them. At the same time, the Council has drawn special attention to the need for greatly intensified "goals research" into the ends to which resources are being, or should appropriately be, allocated.

The Council's policy conclusions may be grouped under four broad headings: demand management policies; supply and adjustment policies; structural policies; and complementary policies aimed at raising the level of public understanding in all parts of our economic and social system.

A section of the cyclotron vault at TRIUMF nuclear research project at the University of British Columbia. The walls are 13 feet thick to guard against radiation.





1. In the area of demand management policies — monetary and fiscal policies — the Council has urged the adoption of a different approach from that which has characterized much of the postwar period. It has recommended that within the limits set by various constraints that are beyond Canada's control, the strategy should be modified and redirected towards "steering" the economy along a smoother underlying growth path, in line with the economy's continually expanding potential.

The Council's approach would essentially aim at a "growth-oriented" rather than a "cycle-oriented" approach to the management of demand. To this end, the Council has recommended that monetary policy, over the longer term, should be directed towards keeping the growth of the money supply roughly in line with the underlying growth rate of potential output. There is evidence that the United States is moving away from an earlier preoccupation with shorter-term cyclically oriented policies towards a longer-term policy strategy of the kind outlined above. This implies larger scope for, and may indeed facilitate, the use of a similar approach in Canada.

Fiscal policy should be directed towards the maintenance of a small but sustained budget surplus at high employment. This surplus, the Council has suggested, should be measured on a national accounts basis, taking into account all levels of government, and including the transactions of the Canada and Quebec Pension Plans.

2. These major instruments of demand management need to be supplemented by a wide-ranging set of supply (growth-oriented) and adjustment policies: Policies must be designed to enlarge supplies of goods and services, particularly by encouraging greater efficiencies in all parts of the economic system. Policies must be designed also to bring about a better matching of supply and demand by improving the allocation of resources, eliminating bottlenecks and rigidities, and removing barriers to the easy flow of resources to some points in the system (and also away from other points in the system) where changes in demand are occurring. Additional emphasis is needed on policies to make markets work better, so that resources can be allocated or reallocated more smoothly and efficiently — that is, with minimum disruptions in employment and production — in response to changing economic conditions resulting from external influences, government policies, and other forces. Such policies are essentially "productivity enhancing" policies.

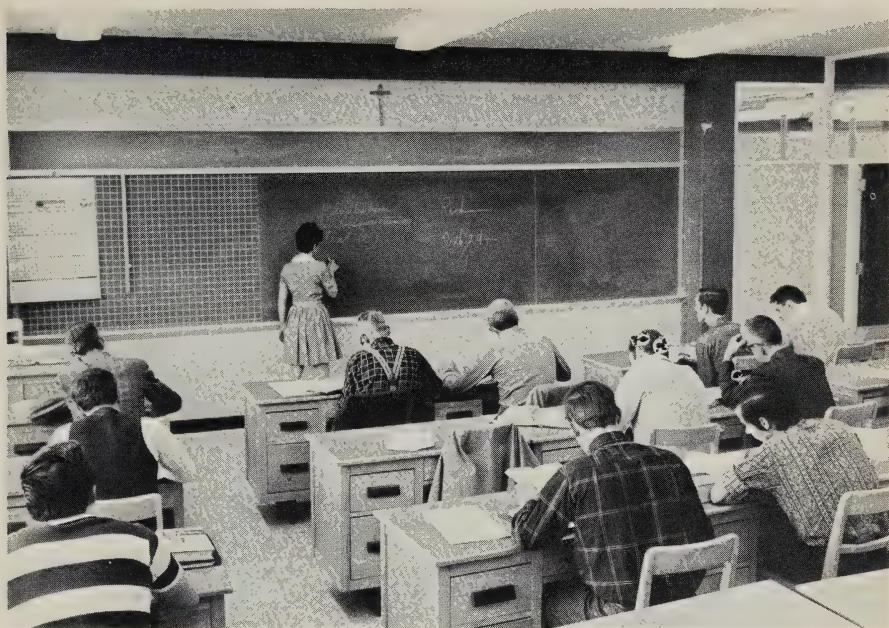
Among the fields to which the Council has drawn special attention are the following:

Education: policies to achieve appropriate advances in the schooling and skills of people in the labour force, including management.

Manpower: policies to achieve a better matching of workers and jobs.

Tariffs: policies to promote an increased volume and specialization in Canadian industry.

Competition: policies to promote increased efficiencies in the production and marketing of goods and services. Innovation: policies to raise and strengthen risk-taking and the innovative capabilities of Canadian industry. Technological change, covering the whole range of activities from research and development through to production and marketing, can be a powerful engine for economic progress.



Professional courses in agriculture for adults are sponsored by the Government of Quebec. Each school year is from November to April.

Adjustment to change: policies to facilitate adjustment and ease the hardships on individuals and industries which arise when broadly beneficial changes in commercial policies and technology are introduced.

Consumer protection: policies to ensure that the growing production capabilities of the economy are made to serve the interests of consumers in matters of cost, safety, and effectiveness.

Copyrights, patents, trademarks, and industrial design: policies to encourage creativity and invention, and to facilitate the dissemination of knowledge and its effective application.

Construction: policies to stabilize the distorting "stop-go" cycles that have been occurring in the construction industry, and to reduce cost and increase productivity.

3. A third important class of policy conclusions of the Economic Council relates to matters of "structure" in the Canadian economy. For example, as regards the goal of high employment, the Council has stressed that special measures are required to reduce the very high rates of unemployment that occur in the lower-income regions of Canada, as well as the relatively high incidence of

unemployment in some age groups (particularly among the younger). It is also important to seek to achieve further moderation in seasonal fluctuations in employment. In addition, there is a need for effective measures to reduce chronic unemployment that may threaten to make some members of the labour force unemployable.

Similarly, the Council has drawn attention to structural differences in rates of increases in prices and costs, and to the need for special measures in some fields in which particularly high rates of price and cost increases may be persistent.

Of particular and continuing importance in a high-employment economy is careful attention to the removal of structural impediments to the achievement of price stability.

Again, the Council has noted the varying patterns of productivity increase in different sectors of the economy—this was the main theme of the Council's *Seventh Annual Review*—and the need to search for the most important sources of economic growth in the various sectors, as a basis for developing more effective industrial policy strategies to promote productivity growth.

In various Annual Reviews, the Council has attempted to describe and analyze factors contributing to regional disparities, and to develop policies that might assist in narrowing such differences. These disparities have been large and persistent in Canada. A stubborn influence has been exerted by provincial variations in the use of manpower, due in part to differences in the age composition of the population, in rates of participation in the labour force, in the incidence of unemployment, and in the average number of hours worked per week. Also, the Council has drawn special attention to the disparities that appear to exist in productivity levels among different regions in Canada. In the *Fifth Annual Review*, special attention was drawn to a framework of policies that would contribute to making fuller and more productive use of both human and material resources in Canada's lower-income regions. It has also warned against programs that serve mainly to lock people into low-productivity industries and declining occupations, and has recommended increased investment in human as well as industrial capital and in natural resources, and the active promotion of efficient urban growth centres.

The Council has also undertaken a very brief look at the structure of incomes, more particularly, at the problem of poverty. Poverty was the subject of chapters in both the *Fifth* and *Sixth Annual Reviews*, in which the Council attempted to estimate, in very rough terms, the magnitude of poverty in Canada, to describe the principal characteristics of the poor, and to suggest a variety of short-term and longer-term measures that might be developed as part of a program for the elimination of poverty in Canada. In its approach, the Council was concerned both with ameliorating the direct human and social consequences of poverty, as well as with reducing the substantial economic costs involved in large-scale poverty. Such poverty, the Council emphasized, acts as a brake on Canada's economic growth and detracts from the well-being of all Canadians.

4. The Council has also emphasized the importance of a fourth important set of policies. These concern raising the level of public understanding, involvement and participation in decision-making in all parts of the economic and social system.



# Natural Wealth

## Agriculture

Agriculture continues to be the leading primary industry in Canada, ranking ahead of forestry, fishing, mining, and oil wells. The total investment in Canadian agriculture is over \$23,000 million, with about 69 per cent in real estate, 18 per cent in machinery, and 13 per cent in livestock and poultry. In 1969, Canada's export trade in agricultural products was \$1,211 million — about 8 per cent of total exports.

The adjustments in farming during the past decade — fewer farm workers (down from 683,000 in 1960 to 511,000 in 1970), more capital investment per man and increased total output — have all added up to rising productivity. Since the beginning of the 1960's, agricultural productivity, or net output per man, has been



A prosperous farm  
at Sarsfield, Ont.

rising at an average annual rate of 4.8 per cent a year, compared with 2.6 per cent for non-agricultural commercial industries.

Canadian agriculture consists largely of family farms, of which some are incorporated, some are partnerships, but most are individually owned and operated. As farms have become fewer and bigger, many farmers have rented additional land, and some farmers rent all of the land they farm. Today, of the 174 million acres of improved and unimproved land in farming, 76 per cent is owned by farm operators and 24 per cent is rented. Less than one Canadian farm in 100 is under hired management. The cultivated area of a farm is usually limited to whatever size the family can manage, but some farmers have hired help. On a farm specializing in crops such as fruits or vegetables, the acreage is small but the labour requirements tend to be high. On a mechanized grain farm of the Prairies, a farmer may work 1,000 acres or more but the total labour requirement is low.

Though 80 per cent of all the Canadian farmland lies in the West, farming is carried on in all provinces and even in some parts of the Yukon and Northwest Territories. About half of Canada's census farms in 1966 with annual sales of \$2,500 or more produced either wheat or livestock as their main product, 56,000 produced dairy products, and 30,000 produced small grains other than wheat. (Census farms are defined as farms of one acre or larger with annual sales of agricultural products of \$50 or more.)



Farms in Saskatchewan.

Broadly speaking, there are five main types of farms: dairy, livestock (excluding dairy), grain, combination grain and livestock, and special crops. Farms specializing in general livestock production are mainly in Alberta and Ontario, with Quebec and Saskatchewan next. By far the greatest number of dairy farms are in Quebec and Ontario, and about half of Nova Scotia's farms are in dairying. General grain farms with crops such as wheat, oats, barley, flax, and rapeseed are found mostly in Saskatchewan, Alberta, and Manitoba. Farms with a combination of grain and livestock are also mainly in the Prairie Provinces. Ontario leads in the number of special-crop farms—those that gain most of their revenue from vegetables, fruits, potatoes, other root crops, tobacco or forest products—with Quebec second and British Columbia third.

Probably the most important single change in the Canadian agricultural economy in recent decades has been the growing interdependence of the farm and non-farm sectors. Secondary industries provide supplies and services for farm production operations, and they store, process, distribute and merchandise the products of agriculture. Producers of petroleum products, building materials, electric power, fertilizers, certain types of machinery, trucks, chemicals, and pharmaceuticals rely on agriculture for part, and sometimes all, of their sales. Almost a quarter of the people employed in the wholesale trade owe their livelihood to agriculture; and thousands of Canadians in the retail trade are employed in the sale of agricultural products or supplies, or the provision of production, financial or other services to agriculture. Thus, while employment in primary agriculture continues to decline, employment in the agribusiness sector is rising.

In little more than four decades, Canada has changed from a predominantly rural, agricultural country to one that is largely urban and industrial. Farming has become highly mechanized, specialized, and competitive. This rapid transformation, though necessary and desirable, has sometimes caused difficult economic and social problems for those not able to adapt to these changes through their own resources. Today, increasing educational opportunities and federal-provincial rural adjustment and development programs are helping to ensure that persons leaving the land and small rural communities will be equipped to take their place in an urban society, and that those who remain in agriculture will have the resources to enjoy prosperous and productive lives.

### **Canada Department of Agriculture**

When the Canada Department of Agriculture was established in 1867, its most urgent task was to control livestock diseases and prevent their entry into Canada. Nineteen years later, the Experimental Farms system was formed to assist farmers in making the best use of their resources. Today the services of the Department extend from the farmer to the consumer, through all steps in the production, processing, and marketing of crops and livestock.

Among its many activities are the following, carried out by the Production and Marketing and Health of Animals branches: inspection and grading of farm products; protection of crops, livestock, and forests from diseases and pests; promotion of high-quality seed and purebred livestock; and enforcement of laws governing



the sale of farm supplies such as feed, fertilizers, and pesticides. The Department also administers price support, crop insurance and other programs to assist farmers who have experienced unavoidable losses caused by weather, changing markets, and certain other hazards. Solutions to agricultural problems are pursued through research carried out by three branches – Research, Economics, and Health of Animals – and the Grain Research Laboratory of the Canadian Grain Commission for Canada.

The Canadian Grain Commission, which supervises the grading and handling of grain in Canada, operates independently of the Department but is responsible to the Minister of Agriculture. The Canadian Dairy Commission and the Canadian Livestock Feed Board operate in the same way. The Dairy Commission supports the market price of major processed dairy products, and makes direct payments to producers to supplement returns from the market; and the Feed Board ensures the availability and price stability of feed grains to meet the needs of livestock farmers. The Farm Credit Corporation, a Crown Agency that reports to Parliament through the Minister of Agriculture, makes mortgage and syndicate loans to farmers.

The Department established an International Liaison Service in 1969, to coordinate its increasing participation in international organizations and in aid and development programs. The Service also keeps abreast of agriculture policy trends abroad and evaluates the impact of these changes on Canadian agriculture and trade. (See also Agricultural Research.)

## **Farm Income**

Realized net income of Canadian farmers in 1969 was estimated at \$1,379,501,000, down 10 per cent from the previous year and below the record 1966 level by 21 per cent. Provincially, the most significant decline was recorded in Saskatchewan where realized net income dropped by \$172,474,000. The other three western provinces experienced lesser reductions while Ontario, Quebec, and the Maritime Provinces recorded gains in realized net income over 1968.

The fall in realized net income resulted from reduced gross income and increased farm operating expenses and depreciation charges. Realized gross income declined by \$91,302,000 to \$4,808,630,000 in 1969, the lowest level since 1966. This decline was the result of lower cash income from crops (particularly wheat) in the Prairie Provinces and British Columbia. Cash receipts from the sale of livestock and livestock products in 1969 showed gains in all provinces except Saskatchewan. The other two components of realized gross income – income in kind and supplementary payments – made slight gains over their 1968 levels.

On the expense side, total operating and depreciation charges in Canadian agriculture rose by more than \$62 million between 1968 and 1969. This reflects increases in all provinces except Manitoba and Saskatchewan where slight decreases were recorded. The reductions in these two provinces reflect significant declines in expenditures on fertilizer. The expenses of Manitoba farmers for this item were cut by almost 48 per cent and Saskatchewan farmers reduced their expenditures on fertilizer to less than half of the 1968 level. Lesser reductions in farm expenses for fertilizer were recorded in Alberta and Ontario.

The reduction in realized gross income from 1968 to 1969 occurred in spite of increases in both the physical volume of agricultural output and its average price level.

The index of the physical volume of agricultural production stood at 179.7 (1949=100) in 1969, a rise of 8.6 points over the 1968 level. The index of farm prices gained 1.8 points over the same period. Under conditions of rising physical output and prices, a decline in the level of gross income indicates that inventories must be increasing. Between 1968 and 1969, the value of inventories of agricultural products in Canada rose by \$308,866,000. Expanded stocks of grains account for more than half of this increase.

The above forces, that is, decreased realized gross income, increased operating and depreciation charges, and rising inventory values, combined to yield total net income in 1969 of \$1,688,367,000. This was below the 1968 level by \$54,766,000 or approximately 3 per cent.

Net Income of Farmers from Farming Operations 1967-69

Item	1967	1968	1969
	Thousands of dollars		
1. Cash income . . . . .	4,376,776	4,355,248	4,195,593
2. Income in kind . . . . .	480,192	536,716	603,102
3. Supplementary payments . . . . .	6,137	7,968	9,935
4. Realized gross income (1 + 2 + 3) . . . . .	4,863,105	4,899,932	4,808,630
5. Operating and depreciation charges . . . . .	3,211,912	3,367,111	3,429,129
6. Realized net income (4 - 5) . . . . .	1,651,193	1,532,821	1,379,501
7. Value of inventory changes . . . . .	-155,115	210,312	308,866
8. Total gross income (4 + 7) . . . . .	4,707,990	5,110,244	5,117,496
9. Total net income (8 - 5) . . . . .	1,496,078	1,743,133	1,688,367

A sprinkler system on a test plot at the Experimental Farm near Lethbridge, Alta.







An aerial photograph gives an idea of the size of grain farms on the Prairies.

## Field Crops

The Prairie Provinces of Manitoba, Saskatchewan, and Alberta account for 87 million acres or slightly over 80 per cent of Canada's total improved agricultural land which is currently estimated at approximately 108 million acres. The climate of the Prairie Provinces favours the production of six major field crops: wheat, oats, barley, rapeseed, flaxseed, and rye. The major wheat-producing area of the prairies has traditionally been the southwest corner of Manitoba, southern Saskatchewan, and the southeastern part of Alberta. These areas are characterized by low rainfall, a high rate of evaporation and fertile brown and light brown soils which have been formed under Prairie grassland. Production of the coarse grains and oilseeds tends to be concentrated in the more northerly districts where soil moisture levels are higher and the growing season is shorter.

In recent years, Prairie farmers have come under increasing pressure to modify their traditional production patterns in favour of others better suited to prevailing market conditions. Canada's reliance on exports to market the bulk of its wheat production, combined with declining demand in the international wheat market has prompted sizable reductions in its wheat acreage over the past two years. In 1968 the acreage sown to all types of wheat was 29.4 million acres. Unfavourable



marketing conditions, reflected in low delivery quota levels, prompted producers to cut their wheat acreage to 25 million acres in 1969. In the spring of 1970, the federal government implemented "Operation LIFT," a program designed to reduce the burdensome wheat inventories by diverting cropland from wheat production to summerfallow and forage crops. As a result, the total wheat acreage was reduced to approximately 12.5 million acres in 1970. The drop in production, combined with improved export sales in the 1970-71 crop year, has substantially reduced the wheat surplus and as the demand in world markets improves in the coming years it is expected that production of wheat in Canada will increase.

Coarse grains and oilseed crops have been the logical alternatives to wheat production for a large number of western Canadian farmers. Increasing world demand for edible oils has favoured rapeseed production in Canada which became the world's largest producer and exporter of this commodity in the 1970-71 crop year. Flaxseed regained popularity in the past four years, with production rising from 9.0 million bushels in 1967 to 48.7 million in 1970, in spite of the fact that world demand for this industrial oilseed is declining. It is expected that a build-up in flaxseed stocks both in Canada and abroad will result in a future level of production significantly below that of 1970.

Pumpkins before harvesting in the autumn.



The acreage devoted to barley production in the Prairies has also increased considerably, mainly in response to the growing domestic demand for livestock feed. In the early 1960's barley acreage was fairly constant at levels between 5 and 6 million acres. In 1970 the Prairie acreage of this crop had jumped to 9.5 million acres and with the added impetus of expanding export opportunities which began to be realized early in that year, it is expected that barley production will continue to increase.

Field crops outside the Prairie region reflect the emphasis on providing livestock feeds for local consumption, thus a large proportion of land is devoted to forage crops, pasture, and mixed grains. In addition a large volume of feed grain moves from the Prairie Provinces to the rest of Canada.

Potatoes are an important cash crop in Prince Edward Island and New Brunswick, and in Ontario soybeans have gained prominence as a contributor to Canada's supply of edible vegetable oil.

### Canadian Exports of Six Major Grains

Total exports of wheat, oats, barley, rye, flaxseed, rapeseed and their products amounted to 366.9 million bushels in 1968-69, some 11 per cent less than the 1967-68 figure of 410.6 million and 26 per cent below the ten-year (1957-58 - 1966-67) average of 492.8 million. The 1968-69 total exports were 7 per cent lower than the long-term (1937-38 - 1966-67) average of 393.1 million bushels. Exports of wheat and flour in terms of wheat, at 305.8 million bushels, were 9



Seventeen million tons of the chief grains — wheat, barley, corn, and soybeans — were carried through the St. Lawrence Seaway to countries abroad in 1970.



### Estimated Area, Yield, and Production of Principal Field Crops, 1969 and 1970

Crop	Area in Acres		Yield per Acre in Bushels		Production in Bushels	
	1969	1970	1969	1970 <sup>1</sup>	1969	1970 <sup>1</sup>
All wheat . . . . .	24,967,700	12,484,000	27.4	26.6	684,276,000	331,519,000
Winter wheat . . . . .	360,000	355,000	39.8	43.9	14,328,000	15,584,000
Spring wheat <sup>2</sup> . . . . .	24,607,700	12,129,000	27.2	26.0	669,948,000	315,935,000
Oats for grain . . . . .	7,655,000	7,149,000 <sub>r</sub>	48.5	51.5	371,387,000	367,850,000
Barley . . . . .	9,535,100	10,042,900	39.7	41.4	378,383,000	415,704,000
All rye . . . . .	927,300	1,014,700	17.8	22.1	16,493,000	22,427,000
Fall rye . . . . .	821,300	875,700	17.7	22.6	14,535,000	19,800,000
Spring rye . . . . .	106,000	139,000	18.5	18.9	1,958,000	2,627,000
Mixed grains . . . . .	1,740,300	1,939,800	50.2	50.8	87,346,000	98,573,000
Corn for grain . . . . .	978,000	1,189,500 <sub>r</sub>	75.1	84.4	73,426,000	100,348,000
Buckwheat . . . . .	99,700	151,800 <sub>r</sub>	17.0	18.7	1,695,000	2,833,000
Peas, dry . . . . .	73,000	86,400	17.5	18.9	1,280,000	1,631,000
Beans, dry . . . . .	90,000	82,000	21.7	22.6	1,951,000	1,857,000
Flaxseed . . . . .	2,340,700	3,368,300	11.8	14.5	27,548,000	48,932,000
Soybeans . . . . .	322,000	335,000	23.8	31.0	7,664,000	10,385,000
Rapeseed . . . . .	2,012,000	3,950,000	16.6	18.1	33,400,000	71,300,000
			cwt.	cwt.	cwt.	cwt.
Potatoes . . . . .	306,300	313,900	169.3	169.9	51,859,000	53,317,000
			lbs.	lbs.	lbs.	lbs.
Mustard seed . . . . .	267,000	200,000	966	940	258,000,000	187,900,000
Sunflower seed . . . . .	48,000	70,500 <sub>r</sub>	708	785	34,000,000	55,350,000
			tons	tons	tons	tons
Tame hay . . . . .	12,606,000	13,620,000	2.03	2.08	25,577,000	28,266,000
Fodder corn . . . . .	682,100	701,300	12.40	13.54	8,459,000	9,496,000
Field roots . . . . .	10,900	9,700	11.74	12.99	128,000	126,000
Sugar beets . . . . .	79,227	68,722 <sub>r</sub>	13.61	13.24	1,078,221	909,642

<sup>1</sup>As indicated on the basis of conditions on or about October 22.

<sup>2</sup>Includes relatively small quantities of winter wheat in all provinces except Ontario.

<sub>r</sub>Revised figures.

per cent below the 336.0 million exported in the previous year and were 24 per cent less than the ten-year average of 402.9 million but surpassed the long-term average of 304.6 million. Clearances of Canadian oats and oat products, at 2.7 million bushels, were less than the 3.5 million in 1967-68. Exports of Canadian barley and its products amounted to 26.4 million bushels, sharply below the 1967-68 level of 41.4 million and rye exports also showed a slight decrease from 4.8 million bushels in 1967-68 to 4.2 million in 1968-69. At 13.4 million bushels, clearances of flaxseed were 6 per cent above the 1967-68 level of 12.6 million and rapeseed exports, at 14.3 million bushels, were 16 per cent larger than the previous year's total of 12.3 million.

The 1968-69 exports of bulk wheat, at 280.5 million bushels, were below the preceding year's total of 310.7 million and also lower than the recent ten-year average of 362.9 million.

During the 1968-69 crop year, China became Canada's principal wheat customer, with imports from Canada of 82.0 million bushels. Britain was Canada's second largest wheat market with imports of 55.7 million, while Japan purchased 43.3 million and became Canada's third largest wheat customer. Other leading markets



during 1968-69 with quantities in millions of bushels (1967-68 figures in brackets) were India, 15.3 (22.4); Italy, 15.2 (10.2); Federal Republic of Germany, 12.8 (17.5); Belgium and Luxembourg, 7.5 (9.9); Netherlands, 5.8 (5.0); Switzerland, 5.7 (2.6); France, 4.4 (0.9); Poland, 3.4 (5.8); and Venezuela, 3.0 (3.1).

## Fruits and Vegetables

The fruit and vegetable industry is an important part of the agricultural and food distribution sectors of the economy. There are over 25 fruit and vegetable crops grown commercially in Canada with an annual farm value of about \$160 million (potatoes excluded).

The most important fruit grown in Canada is the apple. Commercial apple orchards are found in Nova Scotia, New Brunswick, southern Quebec, throughout much of Ontario, and the interior of British Columbia, particularly in the Okanagan Valley. Tender tree fruits—pears, peaches, cherries, plums—are also grown in Ontario; the most important concentrations are in the Niagara Peninsula and in Essex County. These same fruits, as well as apricots, are also grown on a large scale in the southern part of the Okanagan Valley.

In addition to tree fruits, strawberries and raspberries are cultivated commercially in the Maritimes, Quebec, Ontario, and British Columbia. British Columbia fruit growers in the Lower Mainland and on Vancouver Island also produce loganberries. Grapes are grown quite extensively in the Niagara district of Ontario and

Geraniums in a greenhouse in Medicine Hat, Alta., the floral capital of the Prairie Provinces.





The rich soils in the valleys of British Columbia, such as the Okanagan Valley, support orchards of fruit trees (seen here in blossom).

on a smaller scale in British Columbia. The native blueberry is found wild over large areas in Canada and is harvested in commercial quantities in the Atlantic Provinces, Quebec, and Ontario. A cultivated crop is grown in British Columbia.

Canada is a large exporter of apples. However, it is expected that exports to Britain will probably continue along the recent downward trend. There could be a compensating increase in other markets, particularly the United States, where the smaller 1970 crop in the western states might bring about a return to former Canadian export levels.

The total farm value of fruit crops grown in Canada in 1969 was \$77.5 million. In the districts where fruit crops are produced their sales make up an important part of the farmers' incomes and play an important role in the farm economy. The 1970 apple crop was estimated at 443,600 tons, lower than the 1969 crop of 489,000 tons.

The production of field-grown vegetables in Canada is seasonal. During the winter when no domestic vegetables are being harvested (except in greenhouses), supplies of most fresh vegetables are imported duty free from the United States. During the Canadian growing season a large percentage of the domestic requirements are met from Canadian output. Some vegetables are exported from





Raspberry producers in the Picton area of Ontario use a mechanical harvester to pick raspberries.

Canada, particularly to a few large centres of population in the United States that are close to the border.

An estimated 242,790 acres were planted to commercial vegetable crops (potatoes excluded) in 1970; 227,260 acres were planted in 1969. Farm value of the production amounted to \$82.2 million in 1969 and \$77.6 million in 1968. The harvested area of principal canning crops—beans, corn, peas, and tomatoes—totalled 130,040 acres in 1969 and 132,870 acres in 1970.

Potatoes are the most important of the vegetables produced in Canada. Production in 1970 amounted to 53.3 million hundredweight. In 1969 it was 51.9 million hundredweight. Export sales of processed potato products are dropping as some of Canada's main export markets now have new facilities and have expanded their production to meet the demand.

The processing industry is important in the marketing of Canadian-grown fruits and vegetables. The output of frozen cherries and berries has increased significantly in recent years and this trend will likely continue as improvements are made in technology, promotion, distribution, and retail storage facilities. However, the processing of canned tender tree fruits has declined considerably and



imports have increased rapidly. A little more than half the production of vegetables (potatoes excluded) goes into processing and this portion has been increasing. The consumption of frozen vegetables has increased considerably in recent years. Most of the vegetables for processing are grown under a system whereby the processor contracts annually with each grower for certain acreages.

## Livestock

Preliminary estimates for 1970 indicate that total cash receipts from farm produce were \$4,162 million of which \$2,624 million (63 per cent) came from livestock and animal products, a rise from 62 per cent in 1969. Cattle (including calves) and pig sales in 1970 amounted to \$974 million and \$488 million respectively. This represents 23 and 11 per cent of total cash receipts and varies little from 1969. Cash receipts from the sale of sheep and lambs in 1970 decreased to about \$8.0 million from about \$9.0 million in 1969.

On June 1, 1970, the number of cattle and calves on farms in Canada (not including Newfoundland which had 8,554 head at the time of the June 1, 1966 census)

At the Lethbridge, Alta., Research Station, scientists have developed rations to help cattle make the transition from pasture to feed lots.



was estimated at 13,060,400, up 4 per cent from 12,586,000 at June 1, 1969, and the first increase in cattle numbers since the 1965 record of 13,260,000. The number of milk cows, 2,550,600, decreased by 1 per cent thus continuing the most recent downward trend begun in 1962. Beef cows, at 3,082,100, increased by 5 per cent over a year earlier. Steers were estimated at 1,832,500 head, up 6 per cent. The shift from dairy animals towards beef thus continued in 1970. Inspected slaughter of cattle in 1970 amounted to 2,700,833, down 1 per cent from 1969. More beef heifers were kept back for breeding because of higher beef prices. Total slaughter was thus reduced. Exports of slaughter cattle (200 lb. and more) in 1970 amounted to 17,357, down 35 per cent from 1969. Exports of feeder cattle (200 lb. and over) decreased even more: they fell by 71 per cent from 26,248 in 1969 to 7,507 in 1970. Calf exports to the United States on the other hand were 117,427, up 1.5 per cent from a year earlier. A notable feature of the year was the increase in both beef exports (up 68 per cent) and beef imports (up 21 per cent). Imports from Australia were double those in 1969. The Canada Department of Agriculture reports that the weighted average price for choice slaughter steers at Toronto for 1970 was \$32.25 while it was \$31.10 in 1969. The average price for good feeder steers was \$33.95 in 1970 and \$31.60 in 1969. These prices were well above the 5-year averages (1965-69) of \$28.10 and \$27.85. All grades of cattle brought higher prices.

On June 1, 1970, there were 7,086,000 pigs on farms in Canada (not including

A cowboy rounds up cattle during the winter in the Badlands of Alberta.







Cheviot ewes on a sheep farm at Fonthill, near Welland, Ont.

Newfoundland which had 7,307 at June 1, 1966), up 23 per cent from June 1, 1969, and the highest number since the record of 7,413,100 in 1943. The big rise was largely due to the 45 per cent increase of pigs in the West. Poor international wheat markets caused western farmers to use their grain to feed pigs. Pig carcasses graded in 1970 numbered 8,648,250 according to the Canada Department of Agriculture; this was a 16 per cent increase over 1969. In the last quarter of the year, however, numbers slaughtered were 30 per cent higher as the full impact of the increased production began to be felt. The increased slaughter lowered prices, making the weighted, average price at Toronto \$32.20 per hundredweight for Index 100 hogs, a drop from \$35.70 in 1969. The lower prices, however, boosted exports of both pork and live pigs. Exports of pork increased by 22 per cent to 70,550,548 pounds. Exports of live pigs increased by 341 per cent from 13,899 in 1969 to 61,272 in 1970. Most of this increase in live numbers has been due to an export movement from the West into the north-western United States.

The sheep and lamb population of Canada (not including Newfoundland, which had 14,381 at June 1, 1966) increased for the first time since 1958. On June 1, 1970, the numbers were estimated at 898,000, up 2 per cent from June 1, 1969. An 8 per cent increase in the West more than offset the 5 per cent decrease in the East. The breeding flock of sheep one year old and over increased 2 per cent, with an estimated





7 per cent rise in the West and a 1 per cent drop in the East. The build-up in sheep numbers was one of the causes of a drop of 15 per cent in the inspected slaughter of sheep and lambs which declined from 212,751 in 1969 to 181,332 in 1970. Exports of sheep and lambs dropped by 57 per cent from 22,509 in 1969, to 9,577 in 1970 as domestic demand increased. Imports of live animals increased from 22,188 head in 1969 to 28,121 in 1970. Imports of mutton and lamb, on the other hand, decreased by about 7 per cent from 75,114,300 pounds in 1969 to 70,010,600 in 1970. The weighted, average price for good lambs, at Toronto, was \$33.65 in 1970 up from \$32.80 in 1969 and \$28.45 for the 1965-69 average.

### Estimated Meat Production and Consumption, 1968 and 1969

Item	1968	1969	1968	1969
	<u>Beef</u>		<u>Veal</u>	
Animals slaughtered ..... No.	3,446,100	3,254,600	1,107,800	903,500
Animals exported ..... No.	216,092	115,564	137,566	126,926
Meat production ..... '000 lb.	1,855,346	1,801,347	134,738	107,619
Total domestic disappearance ..... '000 lb.	1,801,726	1,822,420	133,254	106,585
Per capita consumption ..... lb.	86.7	86.4	6.4	5.1
	<u>Pork</u>		<u>Mutton &amp; Lamb</u>	
Animals slaughtered ..... No.	9,233,700	8,730,100	454,400	413,000
Animals exported ..... No.	21,353	16,958	26,669	22,509
Meat production ..... '000 lb.	1,181,301	1,134,496	19,685	18,081
Total domestic disappearance ..... '000 lb.	1,113,612	1,093,618	87,417	84,307
Per capita consumption ..... lb.	53.6	51.9	4.2	4.0
	<u>Offal</u>		<u>Canned Meat</u>	
Production ..... '000 lb.	122,805	115,560	114,500	132,405
Total domestic disappearance ..... '000 lb.	79,568	81,965	136,959	159,106
Per capita consumption ..... lb.	3.8	4.0	6.6	7.5

## Dairying

The extent of dairying is largely dependent upon the population density in any one area of Canada. Since Ontario and Quebec are the most heavily populated areas in Canada, most of the milk is produced in these two provinces, which together accounted for 74 per cent of the total production in 1969.

Dairy farmers have made significant improvements in the production of milk. One important cause has been the increased production of milk per cow. For example, in 1950, 3.1 million milk cows produced 14,900 million pounds of milk; in 1969, 2.6 million milk cows produced 18,700 million pounds of milk. There are four main dairy breeds in Canada—the Holstein-Friesian, the Ayrshire, the Jersey, and the Guernsey. Minor breeds are the Shorthorn, the Brown Swiss, the Red Poll, and the Canadienne.

Total milk production has increased slightly in the past three years. In 1967, total milk production was 18,200 million pounds; in 1969 it was 18,700 million pounds. The largest portion of the milk produced—about 64 per cent—was used for the manufacture of dairy products. About 27 per cent was sold as fluid milk, and 9 per cent remained on the farms where it was consumed and used to feed livestock.

A herd of Holstein-Friesian cattle grazing on a farm near Ingersoll, Ont. The predominant breed of dairy cattle raised in Canada is Holstein-Friesian.



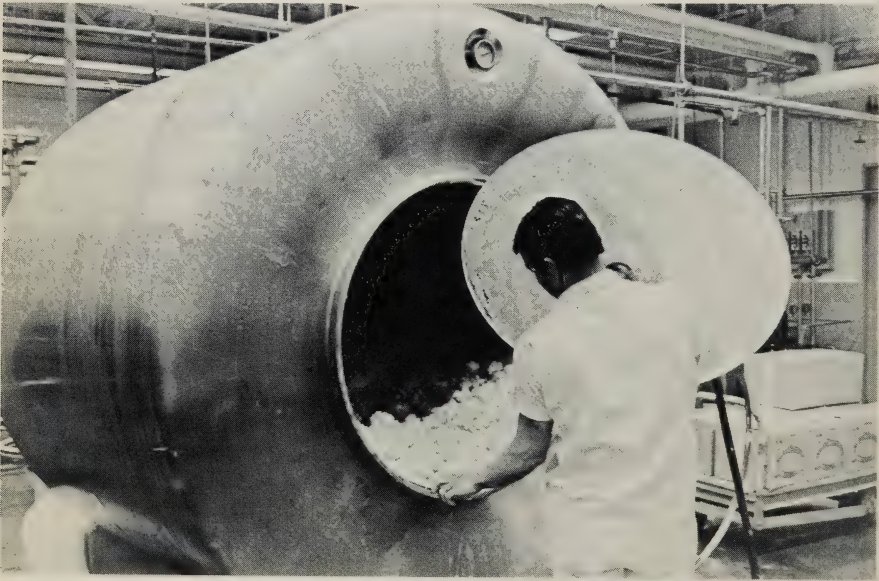


**Dairy Production, by Economic Area, 1967-69**

Area and Year		Total Milk Production	Milk Used in Fluid Sales	Products Manufactured <sup>1</sup>			
				Butter Creamery	Farm	Cheddar Cheese	Ice Cream Mix
				Thousands of pounds			Thousands of gallons
Maritimes .....	1967	873,719	373,665	11,528	318	4,174	2,178
	1968	828,752	363,619	10,204	321	3,759	2,276
	1969	852,582	354,322	11,276	292	4,318	2,293
Quebec and Ontario .....	1967	13,209,886	3,508,106	247,415	594	150,267	17,040
	1968	13,386,760	3,453,082	254,409	574	155,624	16,794
	1969	13,801,236	3,415,180	271,828	547	155,425	17,624
Prairies .....	1967	3,228,987	792,608	66,723	2,131	5,221	5,784
	1968	3,218,196	790,521	65,642	2,036	5,307	5,588
	1969	3,150,315	788,332	62,616	1,920	6,117	5,859
British Columbia .....	1967	895,392	527,095	4,233	121	1,418	3,145
	1968	927,874	522,166	5,641	110	1,713	3,239
	1969	907,249	529,997	4,410	110	1,826	3,329
Totals .....	1967	18,207,984	5,201,474	329,899	3,164	161,080	28,147
	1968	18,361,582	5,129,388	335,896	3,041	166,403	27,897
	1969	18,711,382	5,087,831	350,130	2,869	167,686	29,105

<sup>1</sup> Not included in this table are: whey butter: 5,348,000 pounds in 1967, 5,941,000 pounds in 1968, and 5,741,000 pounds in 1969; other kinds of cheese: 28,179,000 pounds, 33,074,000 pounds, and 39,451,000 pounds respectively; and concentrated milk products: 759,631,000 pounds, 811,219,000 pounds, and 820,841,000 pounds respectively.

Butter is processed in a dairy of the Papineau Agricultural Co-operative, western Quebec.





In Canada the main manufactured dairy products are creamery butter, cheddar cheese, skim milk powder, and evaporated milk. Butter production is rather widespread across Canada, while Ontario and Quebec produce the bulk of the cheese and concentrated milk products.

Annual per capita consumption of milk and its equivalents in dairy products has been declining for some time. During 1969 the per capita consumption of milk and its milk equivalents in dairy products amounted to 829 pounds.

The total farm value of milk production during 1969 was estimated at \$743 million. Of this amount farmers derived \$677 million from the sales of milk and cream. The milk that remained on the farm was valued at \$66 million.

## Poultry and Eggs

Since World War II Canada's poultry industry has changed radically. Traditionally most farms kept a few hens, but now most of the poultry meat and eggs are produced by large-scale enterprises, relatively few in number and highly efficient. The average number of laying hens increased gradually from 16.4 million in 1921 to a peak of 31.5 million in 1947; there were 28.5 million in 1970. Although the Canadian population increased by 139.7 per cent between 1921 and 1970 there were only 73.8 per cent more layers in the same period. However, the rate of lay per hundred layers more than doubled: from 9,600 in 1921 to 20,888 in 1970. Per capita consumption has risen from 14.1 dozen in 1921 to 21.8 in 1970. Per capita consumption of poultry meat amounted to 9.6 pounds in 1926, increased gradually to 23.1 pounds in 1951, and reached a record of 44.8 pounds in 1970.





Models wear coats of Canadian fisher, Canada majestic ranch mink, and Quebec Preserve natural beaver.

## Furs

Fur trading led to the early colonization of Canada. The first explorers returning to the Old World carried with them the pelts of fur-bearing animals obtained from Indian trappers, and the desire to gain control of this trade led to the formation of companies and associations which, in return for certain privileges in the trade, agreed to promote colonization in the new country. The first company chartered to trade in furs was formed by a number of merchants of France in 1603. Exploration of the northern and western parts of Canada showed that the territory abounded in wildlife, and in 1670 an English company—the Hudson's Bay Company—was chartered to trade in furs, and built its first trading post on Hudson Bay. Other posts were soon erected and their establishment was continued until their locations extended to the Pacific. The first Canadian company to trade in furs was formed by a number of Montreal merchants in 1783. In 1821 all fur trading companies of British North America were united under the Hudson's Bay Company.

Fur statistics have been collected and published annually since 1920. For the 1969-70 fur season the reported harvest of pelts was 5,160,983, less than the 5,537,466 for the 1968-69 season, while the value decreased to \$33,766,389 from \$40,960,308. The value of wildlife pelts sold during the 1969-70 season amounted to \$14,885,152 or 44.1 per cent of the total value. The value of fur farm pelt production decreased to \$18,881,237 from \$22,924,157 with mink accounting for 99 per cent of the value of fur farm production. The value of mink pelt sales was well below the 1965-66 peak of \$29,505,450.

The value of undressed furs exported during the 1969-70 season decreased to \$28,784,000 from \$35,089,000 in the previous season. Imports decreased to \$18,696,000 in 1969-70 from \$21,652,000 for 1968-69.

Number and Value of Pelts Produced, by Kind, 1969-70

Kind	Number	Value	Average Value
		Dollars	
<b>Wild:</b>			
Squirrel .....	589,933	240,111	0.41
Muskrat .....	1,601,870	1,932,453	1.21
Beaver .....	433,408	6,540,378	15.09
Ermine (weasel) .....	86,406	59,663	0.69
Rabbit .....	45,350	21,978	0.48
Mink .....	108,758	1,067,028	9.81
Fox—White .....	7,363	103,859	14.11
Other .....	46,423	513,459	11.06
Lynx .....	37,477	971,605	25.93
Marten .....	58,521	473,826	8.10
Raccoon .....	51,288	199,305	3.89
Seal—Fur Seal—North Pacific <sup>1</sup> .....	10,371	663,189	63.95
Hair Seal .....	210,802	1,685,674	8.00
Other (badger, bear, cougar, coyote, fisher, otter, skunk, wildcat, wolf, wolverine) .....	72,260	1,412,624	...
<b>Totals</b> .....	<b>3,360,230</b>	<b>15,885,152</b>	...
<b>Ranch-raised:</b>			
Chinchilla .....	18,664	170,781	9.15
Fox .....	1,231	36,608	29.74
Mink .....	1,780,826	18,673,016	10.49
<b>Total</b> <sup>2</sup> .....	<b>1,800,753</b>	<b>18,881,237</b>	...
<b>Grand Totals</b> .....	<b>5,160,983</b>	<b>34,766,389</b>	...

... Not applicable.  
<sup>1</sup> Commonly known as Alaska Fur Seal. The value figures are the net returns to the Canadian Government for pelts sold.  
<sup>2</sup> Includes pelts not allocated by type.

An Eskimo trapper in the Northwest Territories displays white fox pelts.





## Forestry

### The Extent of Canada's Forests

Canada's forests are among her greatest renewable resources. Stretching across the continent in an unbroken belt 600 to 1,300 miles wide, they provide raw material for the great lumber, pulp and paper, plywood, and other wood-using industries so vital to the country's economy. In addition, the forests of Canada control water run-off and prevent erosion, they shelter and sustain wildlife, and they offer unmatched opportunities for human recreation and enjoyment.

Productive forests — those capable of producing usable timber — cover nearly one million square miles. Total volume of wood in these forests is estimated at more than 750,000 million cubic feet. Four fifths of this wood is coniferous and one fifth is deciduous.

Three quarters of Canada's productive forest area is known as the Boreal Forest, stretching in a broad belt from the Atlantic coast westward and then northwest to Alaska. The forests of this region are predominantly coniferous, with spruce, balsam fir, and pine the most common species. Many deciduous trees are also found in the Boreal Forest, with poplar and white birch being the most widespread.

The Great Lakes—St. Lawrence and Acadian regions are south of the boreal region. Here the forests are mixed, and many species are represented. Principal conifers are eastern white and red pine, eastern hemlock, spruce, cedar, and fir. The main deciduous trees are yellow birch, maple, oak, and basswood.

Entirely different in character is the coastal region of British Columbia. Here the forests are coniferous, and because of a mild, humid climate and heavy rainfall, very large trees are common — 200 feet tall and more than six feet in diameter. This region contains less than 2 per cent of the country's forest area, but supplies almost one fourth of the wood cut. Principal species are cedar, hemlock, spruce, fir, and Douglas-fir.

Logging in northern Ontario. Forestry operations are increasingly mechanized.





Ottawa, Canada's capital, has been the site of logging and processing activities for over a hundred years.

The coniferous forests of the mountainous regions of Alberta and the British Columbia interior are mixed; distribution and characteristics of species depend on local climate, which ranges from dry to very humid. Production in this area has expanded rapidly in recent years with the establishment of many new pulp mills.

The only true deciduous forests in Canada occupy a relatively small area in the southernmost part of Ontario, which is predominantly an agricultural district.

### **Ownership and Administration of Forests**

Eighty per cent of Canada's productive forest land is publicly owned. Under the British North America Act, the various provincial governments were given the exclusive right to enact laws regarding management and sale of public lands within their boundaries, including the timber and wood on those lands. In the northern territories, which contain only about 8 per cent of the country's productive forest land, the forests are administered by the federal government.

For many years the policy of both the federal and provincial governments has been to retain in public ownership lands not required for agricultural purposes. In some of the older settled areas of Canada, however, a high proportion of land is privately owned, especially in the three Maritime Provinces, where nearly two thirds of the productive forest area is owned by individuals and companies. Thus, the administration and protection of most of Canada's productive forest area is vested in the various provincial governments, which make the forests available to private industry through long-term leasing and other arrangements.

## Forest Industries

This group of industries accounted for approximately 18 per cent of all Canadian exports in 1970. It includes logging; the primary wood and paper manufacturing industries, using roundwood as their chief raw material; and the secondary wood and paper industries, using lumber, wood pulp, basic paper, and so on, as their principal raw materials for further manufacturing into a host of different wood and paper products.

**Logging.** The degree of mechanization of logging operations in eastern Canada continues to increase rapidly. Several highly sophisticated wood harvesting and processing machines have been developed which permit almost year-round operations and have reduced manpower requirements considerably. Some of the eastern logging systems and machines are now being introduced in the interior of British Columbia, where the logging conditions are similar in some areas. The rapid expansion of the pulp and paper industry in British Columbia, coupled with changes in regulations and stumpage rates introduced by the Forest Service of that province, has led to a marked improvement in the use of forest resources.

The output of Canada's forests in 1969, in the form of sawlogs, veneer logs, bolts, pulpwood, fuelwood, poles, and so on, and other primary forest products, amounted to an estimated 4,304 million cubic feet of wood. Most of the wood for industrial purposes was processed to some degree in Canada. A small percentage was exported without further processing.

**Sawmills and Planing Mills.** This industry is particularly dependent upon the general economic condition of the country and on the state of foreign markets, particularly the American market. As a consequence, 1970 was a rather difficult year. The lumber market was sluggish and prices were relatively low in the face of continually rising costs. However, towards the end of the year some improvement became noticeable and there was optimism, based on the declared intention of the Governments of Canada and the United States to stimulate residential construction.

The lumber production in Canada amounted to approximately 11,260 million board feet in 1970, a slight decrease from the 1969 figure of approximately 11,470 million board feet. Due to the soft market, shipments were somewhat lower than the production. As usual British Columbia accounted for 66 per cent of the total, followed by Quebec and Ontario (14.7 and 7.4 per cent respectively).

During the last several years significant improvements have been made in the productivity of sawmills, in the quality of products, and in the reduction of wood waste. Most medium-sized and large sawmills instead of burning slabs and edgings convert them to wood chips for sale to pulp mills. The long-term trend towards an increase in the size of individual mills and a reduction in their number has accelerated, particularly in British Columbia.

The sawmill and planing mill industry provided 47,987 man-years of employment in 1968, paying \$264,281,000 in salaries and wages. The total value of shipments of their products amounted to \$1,179,572,000 of which lumber accounted for \$1,002,407,000. The value of exports of lumber in that year amounted to \$652,696,000 (\$696,474,000 in 1969 and \$663,775,000 in 1970).



## Other Wood Industries

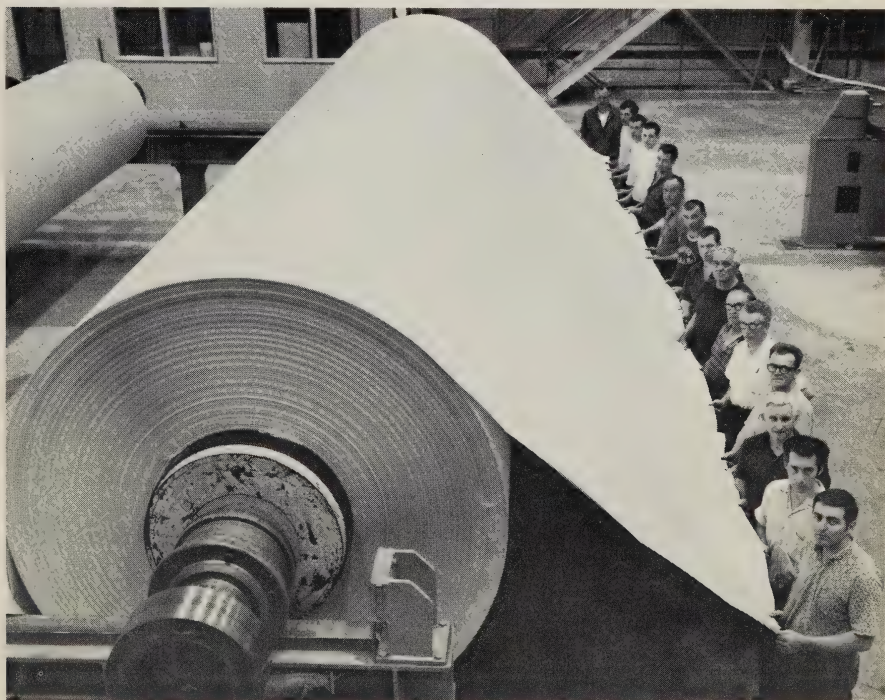
This group includes the shingle mills, veneer and plywood mills, and particle board plants which, like the sawmills and pulp and paper mills, are primary wood industries. It also includes the secondary wood industries which further manufacture lumber, plywood, and so on, into flooring, doors, sashes, laminated structures, prefabricated buildings, boxes, barrels, caskets, and woodenware.

In 1968 these industries provided 37,855 man-years of employment, paying \$218,469,000 in salaries and wages. The value of shipments of their products was \$786,768,000. Of this amount the veneer and plywood industry accounted for \$289,445,000 and the sash, door, and millwork industry (including hardwood flooring) for \$291,923,000.

## Pulp and Paper

The manufacture of pulp and paper has been Canada's leading industry for many years. Though it is not growing as fast as some other manufacturing industries in Canada it still ranks first in employment, salaries and wages paid, and in

Immense rolls of paper are produced at this mill in the Gatineau region in western Quebec.



value added by manufacture. The gross selling value of production of this one industry accounts for 3.4 per cent of the total gross national product and it contributed 13.1 per cent of the total value of domestic exports in 1968 (14.5 per cent in 1967, 15.8 per cent in 1966). Canada is the second largest producer of wood pulp in the world (16,761,623 tons in 1968) after the United States (39,428,000 tons), and the largest exporter. It is by far the largest producer of newsprint, with 8,031,000 tons in 1968 which is close to 40 per cent of the world total.

Although the pulp and paper industry is primarily engaged in the manufacture of wood pulps and basic papers and paperboards, it also produces converted papers and paperboards and even chemicals, alcohol, and other by-products. Approximately 70 per cent of the wood pulp manufactured in 1968 was converted in Canada to other products, particularly newsprint. The remainder was exported.

Quebec has the largest share in Canada's pulp and paper industry, accounting for 36.4 per cent of the total value of factory shipments in 1968. It is followed by Ontario with 26.5 per cent and British Columbia with 22.7 per cent. The share of British Columbia has been climbing rapidly in recent years owing to the establishment of a number of kraft pulp and paper mills, particularly in the interior. In eastern Canada also the kraft sector of the pulp and paper industry has grown most rapidly.

A CL-215 water bomber can scoop up water every seven minutes from the ocean to deluge a forest fire on the coast.





Reforestation, such as this spruce nursery in the Thunder Bay region of Ontario, is an increasingly important part of forestry operations.

### Paper-converting Industries

These include the asphalt roofing manufacturers, the paper box and bag manufacturers, and other paper converters. In 1968 this group counted 498 establishments (497 in 1967), employed 39,178 persons (39,037 in 1967) and paid \$229,409,000 in salaries and wages (\$211,963,000 in 1967). The value of factory shipments set a new record of \$975,141,000 (\$930,132,000 in 1967). In contrast to the basic pulp and paper industry the paper converting industries are primarily dependent on the domestic market.

### Principal Statistics of the Pulp and Paper Industry, 1965, 1967, and 1968

Item		1965	1967	1968
Establishments.....	No.	132	136	137
Employees.....	No.	69,897	73,983	73,498
Salaries and wages .....	\$'000	423,732	516,724	552,162
Value of shipments of goods of own manufacture.....	\$'000	2,104,425	2,301,044	2,446,874
Value added — manufacturing activity .....	\$'000	1,033,532	1,052,085	1,080,941
Pulp shipped .....	'000 tons	4,650	5,150	5,985
	\$'000	592,238	630,604	719,397
Paper and paperboard shipped .....	'000 tons	10,327	10,963	11,183
	\$'000	1,389,910	1,542,726	1,574,616
Newsprint exported .....	'000 tons	7,190	7,464	7,479
	\$'000	869,586	955,261	989,831



## Fisheries

The waters of Canada's coastal regions and inland lakes are breeding grounds for many of the world's most desirable fish and shellfish. Fishing and fish processing have been important regional industries since Europeans were first attracted to Canadian shores to harvest these teeming waters. At the present time Canada has 65,000 commercial fishermen. With an annual catch well in excess of one million metric tons, Canada ranks among the leading fish-producing nations of the world.

Favourable market conditions brought high prices for key products in 1970, increasing the gross earnings of fishermen by 13 per cent above the previous season, although the total catch was virtually unchanged. Industry landings totalled 2,720 million pounds for which fishermen received \$205 million. Marketed value of the 1970 production is estimated to have surpassed \$400 million for the first time. This doubled the 1960 total value. Fishermen's earnings also doubled in the same period, although the total catch increased by only one third.

Exports in 1970 were unchanged at \$278 million. The principal customer was the United States, which regularly buys more than two thirds of all Canadian fishery exports. European and Caribbean countries are the other important markets.

The bulk of Canada's fisheries production comes from the Atlantic coast, where thousands of inshore fishermen and hundreds of offshore trawlers and seiners

Arctic char, a great delicacy, is caught and dried in the Northwest Territories.





Fishermen are flaking a tuna seine at an east coast port.

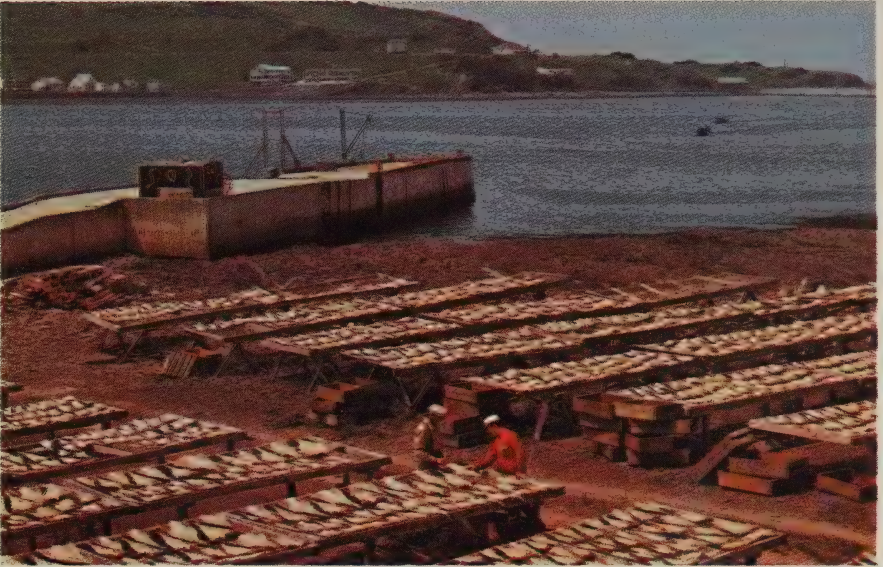
successfully compete with fishing fleets from nearly a score of European and other nations. The Atlantic catch by Canadian fishermen in 1970 was 2,370 million pounds valued at \$132 million. British Columbia's landings of 239 million pounds, one tenth of the east coast figure, were worth \$59 million to fishermen. Freshwater fisheries in Prairie and northern lakes and the Great Lakes contributed an estimated 105 million pounds and \$13.5 million to the national totals.

Provinces producing the heaviest fishery catches were Newfoundland, 981 million pounds; Nova Scotia, 591 million; New Brunswick, 444 million; and Quebec 257 million; while Prince Edward Island doubled its normal catch to 101 million pounds. In value, British Columbia led all provinces with \$59 million, followed by Nova Scotia, \$56 million; Newfoundland, \$36 million; New Brunswick, \$18 million; and Quebec and Prince Edward Island, \$11 million.

British Columbia salmon fishermen had record earnings of \$45 million on landings of 154 million pounds. Pink salmon made up one third of the catch, chums 24 per cent, coho 17 per cent, and sockeye 16 per cent. Gill-netters accounted for 42 per cent of the salmon catch, seiners 37 per cent, and trollers, 21 per cent. The troll fleet were high earners with \$17 million, followed closely by gill-netters with \$16 million, and seiners, \$12 million. The Pacific salmon pack of 1,420,000 cases was 8 per cent above the 1965-69 average annual pack. Export prices for canned pink salmon were unchanged from the previous year but 10 per cent gains were recorded in prices for other salmon species.

Atlantic lobster was the industry's second most valuable product, earning fishermen a record \$30 million on a reduced catch of 36.6 million pounds. A downward trend has been evident in lobster landings which averaged 44 million pounds in the early 1960's and less than 38 million pounds between 1966 and 1970. Improved prices have increased returns to fishermen despite the smaller catches.





A traditional method of preparing fish for market is to dry it outdoors in the sun.

Catches of cod fell sharply in 1970, but better prices maintained the landed value at \$22 million, about the same as the previous season, and it remained the third largest money earner among Canadian fishery products. Cod landings weighed 483 million pounds in 1970, down from 540 million in 1969.

Scallops rose to fourth place in value as fishermen received \$14 million for a reduced catch of 13 million pounds. Pacific halibut, which suffered declines in both landings and prices, slipped to sixth place at \$11 million on a catch of 30 million pounds.

Landings of Atlantic herring for the third successive year surpassed 1,000 million pounds and rose to fifth place in landed value, \$13 million. The catch declined marginally to 1,070 million pounds. The Pacific herring fishery, closed since 1968 except for food production, yielded less than 9 million pounds.

Government measures were taken during the year to deal with two major problems affecting the fisheries, pollution of the aquatic environment and heavy pressure on stocks by both Canadian and foreign fishing fleets.

The new Canada Water Act, the Arctic Waters Pollution Prevention Act, the amended Fisheries Act, and other related legislation passed in June, 1970, enabled the federal government to take a leading role in combating pollution of Canadian waters. Legislation was introduced in October 1970 to consolidate the principal



government units concerned in pollution control within one department having the Department of Fisheries and Forestry as its nucleus.

Amendments to the Territorial Sea and Fishing Zones Act, also passed in June, made possible late in the year the establishment of "fisheries closing lines" in designated areas. The intent of this measure is to reserve the Gulf of St. Lawrence, the Bay of Fundy, and Dixon Entrance, Hecate Strait, and Queen Charlotte Sound exclusively for fisheries management by Canada.

Bilateral agreements to protect the fisheries were reached with the United States and the U.S.S.R. Reciprocal fishing privileges affecting certain areas were negotiated with the United States. Two draft agreements negotiated with the U.S.S.R. restricted the operation of Soviet fishing vessels in a major fishing area off the Pacific coast in return for port and fishing privileges within Canadian territorial waters.

The Canadian Saltfish Corporation was established under legislation approved by Parliament early in 1971. Newfoundland agreed to participate in its operation as sole buyer and marketing agency for salt fish; Quebec has also joined.

In the continuing process of rationalizing fishing effort, a government restriction was placed upon the growth of the Atlantic herring fleet. In co-operation with 15 other countries, Canada refrained from fishing for haddock in specified Atlantic areas for a two-month period and agreed to a catch quota set by the International Commission for the Northwest Atlantic Fisheries.



Lobsters caught in the Atlantic Ocean can be transported live to eastern Canadian cities.

## Minerals and Energy

Canada is richly endowed with mineral wealth: it ranks as the world's third largest producer of various minerals, after the United States and the Soviet Union. A great deal of Canada's history is closely entwined with mineral exploration and development, beginning with Frobisher's search for illusory gold in the 16th century. Coal in Nova Scotia and iron ore in Quebec were discovered and later mined in the 17th and 18th centuries. The Geological Survey of Canada, founded in 1842, encouraged the collection of information about Canada's minerals. In the next decade came the first gold rush—to Barkerville in the Caribou district of British Columbia. Silver, zinc, and lead were subsequently found in the Kootenay district. Crews blasting a roadbed for the Canadian Pacific Railway in northern Ontario first revealed the riches in copper and nickel to be found there. The most famous event in Canadian mining history undoubtedly was the Klondike gold rush of 1896, but more significant have been the discoveries in the 20th century of cobalt, silver, uranium, asbestos, and potash, among other minerals, as well as more copper, nickel, and iron ore.

The remarkable progress of the Canadian mining industry since the Second World War is shown by the increase in value of mineral production from \$499 million in 1945 to \$5,769 million in 1970. A measure of the importance of mining to the Canadian economy may be found in the following figures: over \$1,150 million invested in mineral development in 1970; over \$4,000 million worth of mineral products exported—almost a quarter of Canada's export trade; more than

Modern drill jumbo is employed in the Craigmont Mines, Merritt, B.C.





The South Roberts Mine at Steep Rock Iron Mines, Atikokan, Ont.

100,000 Canadians employed in the industry; about 300 mines operating. Cities such as Sudbury, Ont., and Trail, B.C., depend almost entirely on the mineral wealth in the surrounding area, while Toronto and Calgary are financial centres for the mining and oil industries and many people employed in these cities depend on mining for their livelihood.

The value of production of Canadian minerals in 1970 increased to \$5,769 million from \$4,738 million in 1969 and \$4,725 million in 1968. Labour-management disputes in several mining industries in 1969 caused a marked decline in the production of several minerals notably nickel, copper, and iron ore.

Metallic minerals accounted for 54 per cent of the value of Canadian mineral production in 1970. In order of importance the principal metallic minerals produced in Canada are nickel, copper, iron ore, zinc, lead, gold, and silver. Led by petroleum and natural gas, mineral fuels accounted for 30 per cent of the total value of production. Non-metallic minerals and structural materials accounted for 9 per cent and 7 per cent respectively. The main structural materials are cement, sand and gravel, and stone while the non-metallic minerals group is dominated by asbestos followed by potash, salt, and elemental sulphur.

The leading mineral commodity in 1970 was crude petroleum with a value of production of \$1,127 million, up from \$1,015 million in 1969 and \$423 million in 1960. (The petroleum industry is treated in detail below.)

Nickel production in Canada in 1970 amounted to 308,040 tons valued at \$830 million, an increase from 213,612 tons and \$481 million in 1969. World shortages of nickel and greater labour costs during the last three years have increased the





Mining men look down upon the Cassiar Asbestos Corporation plant in northern British Columbia.

average value of production from \$1.00 a pound in 1968 to \$1.35 a pound in 1970. Most of Canada's nickel is produced in the Sudbury, Ont., region from mines operated by the International Nickel Company and Falconbridge Nickel Mines Ltd.

Copper production in 1970 amounted to 673,747 tons, valued at \$782 million; the figures for 1969 were 573,246 tons and \$588 million. Canada ranks fourth in the production of copper in the non-Communist world. The major producing provinces were Ontario (291,909 tons), Quebec (173,545 tons), and British Columbia (109,647 tons). The International Nickel Company with mines, mills, smelters, and a copper refinery in the Sudbury district of Ontario is Canada's largest copper producer. The second largest Canadian production comes from the Kidd Creek Mine near Timmins, Ont., operated by Ecstall Mining Ltd. The leading copper producers in Quebec are Gaspé Copper Mines at Murdochville and Opemiska Copper Mines Ltd. at Chapais.

The fourth most important mineral in Canada is iron ore. Production in 1970 amounted to 53 million tons (worth \$589 million); in 1969 it was 40 million tons (worth \$454 million). The Iron Ore Company of Canada's Carol Lake mine in Labrador is the leading producer, followed by Quebec Cartier Mining Company at Gagnon, Que., and the Iron Ore Company mines on the Quebec-Labrador border. Canada is the fourth leading producer of iron ore, following the U.S.S.R., the United States, and France.

Ranked according to value of production, zinc was the fifth most important mineral produced in Canada. Production rose to 1,211,299 tons valued at \$386 million in 1970 from 1,207,624 tons worth \$368 million the previous year. Zinc production in Canada has almost tripled during the last ten years. Canada is the leading zinc producer in the non-Communist world, it provides nearly a third of the total mined. Three relatively new mines account for over half the Canadian output of zinc: Ecstall Mining Ltd. near Timmins, Ont., Pine Point Mines Ltd. at Pine Point, N.W.T., and Brunswick Mining and Smelting Corporation Ltd. near Bathurst, N.B.

Natural gas production continued its phenomenal growth with an output of 2,295,000 million cubic feet worth \$351 million. Production in 1969 was 1,978,000 million cubic feet (\$263 million) and in 1960 was only 523,000 million cubic feet (\$52 million). (Natural gas is dealt with in the energy section below.)

Among Canada's most important minerals, asbestos continued to hold seventh position in 1970 with production at 1,654,000 tons, valued at \$215 million. Over 80 per cent of the asbestos produced in Canada comes from the province of Quebec; the rest comes from the Yukon, British Columbia, Newfoundland, and Ontario. The largest asbestos-producing mines are the Canadian Johns-Manville Company Ltd.'s Jeffrey Mine at Asbestos, Que., and the Asbestos Corporation Ltd.'s British Canadian and King-Beaver mines located at Black Lake, Que., and Thetford Mines, Que., respectively. Canada produces approximately a third of the world's total supply of asbestos and is second only to the U.S.S.R. in annual production.

Cement is the most important structural material produced in Canada and the

Dawn at the Norbec mine in the Noranda area of Quebec.





eighth in the list of minerals. About two thirds of Canadian cement comes from Ontario and Quebec where 13 of the 24 cement plants in Canada are located. The largest of these are operated by the St. Lawrence Cement Company at Clarkson, Ont., the Canada Cement Company at Montreal, Que., and the Miron Company Ltd. at St. Michel, Que.

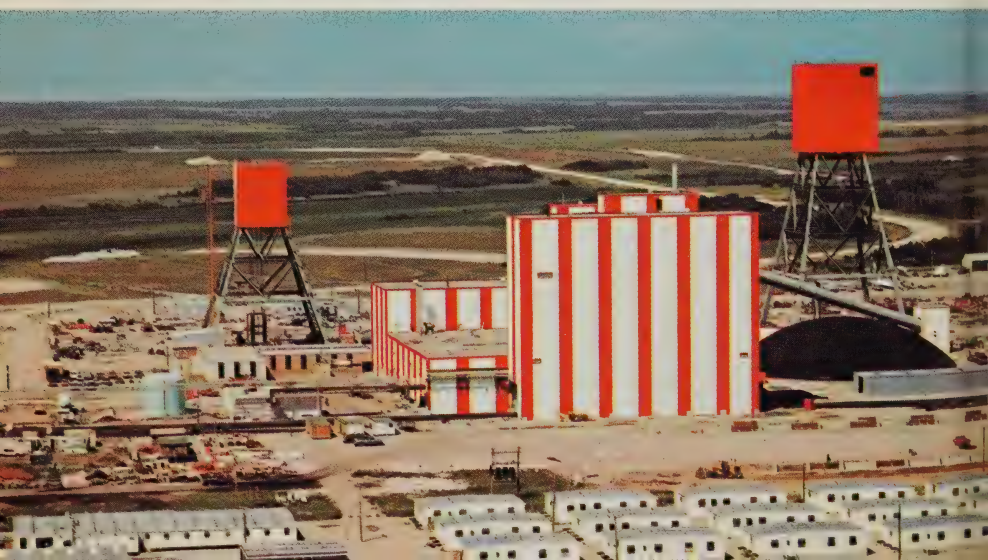
Among the minerals of lesser importance whose production has increased enormously in the past decade are natural gas by-products, elemental sulphur, potash, and molybdenum. The growth in natural gas by-products (pentane, butane, propane, and so on) from \$16 million in 1960 to \$160 million in 1970 is, of course, directly related to the increased production of marketable natural gas which was made possible by the construction of a network of pipelines to transport the natural gas from the fields in western Canada to consumers in the East.

In 1970, elemental sulphur production rose to 3,779,850 tons from 2,973,506 tons in 1969 although the value dropped to \$30.7 million from \$60.7 million. The decline in value is attributable to an over-supply of sulphur in the world market. Natural gas is the major source of elemental sulphur in Canada so its production is in direct proportion to natural gas production regardless of the price of sulphur. Nearly all sulphur is transformed into sulphuric acid of which one half is used in the manufacture of fertilizers.

Canadian potash production increased from less than \$1 million in 1960 to \$116 million in 1970 as a number of mines were opened in Saskatchewan between 1962 and 1970. The largest Canadian potash producer is the International Minerals and Chemical Corporation (Canada) Ltd. which operates two mines at Esterhazy, Sask. About 95 per cent of the world's potash is used as fertilizer.

Canada is second only to the United States among the producers of molybdenum. The value of production increased from \$1 million in 1960 to \$63 million in 1970. Over 80 per cent of the Canadian production comes from three mines in British Columbia which are operated by Endako Mines Ltd., British Columbia Molybdenum Ltd., and Brenda Mines Ltd.

A potash mine and refinery near Rocanville, Sask.





## Canada's Mineral Production, by Kind, 1969 and 1970

		1969		1970 <sup>1</sup>	
		Quantity	Value in Dollars	Quantity	Value in Dollars
<b>Metallics</b>					
Antimony .....	lb.	820,122	508,476	716,000	1,131,300
Bismuth .....	lb.	579,059	2,530,564	571,000	3,252,600
Cadmium .....	lb.	5,213,054	18,349,949	4,246,200	16,058,900
Calcium .....	lb.	942,682	953,522	400,000	338,000
Cobalt .....	lb.	3,255,623	6,851,046	5,228,900	11,893,000
Columbium (Cb <sub>2</sub> O <sub>3</sub> ) .....	lb.	3,414,495	3,172,845	4,919,000	5,303,600
Copper .....	lb.	1,146,491,300	588,280,597	1,347,494,680	782,490,300
Gold .....	troy oz.	2,545,109	95,925,158	2,357,620	86,218,120
Indium .....	troy oz.	..	..	..	..
Iron ore .....	ton	40,054,274	454,075,618	53,209,800	589,126,000
Iron, remelt .....	ton	..	26,643,290	..	29,975,300
Lead .....	lb.	637,263,478	96,672,869	766,415,400	121,246,900
Magnesium .....	lb.	21,274,841	7,263,849	19,167,000	6,478,400
Mercury .....	lb.	..	..	..	..
Molybdenum .....	lb.	29,651,261	53,387,585	35,353,500	62,625,000
Nickel .....	lb.	427,223,131	481,055,140	616,080,800	829,643,800
Platinum group .....	troy oz.	310,404	30,881,016	461,200	42,696,500
Selenium .....	lb.	795,865	4,552,347	604,300	5,160,600
Silver .....	troy oz.	43,530,941	84,014,909	44,282,680	81,922,980
Tantalum .....	lb.	130,298	937,744	315,000	2,200,000
Tellurium .....	lb.	72,410	467,769	58,900	356,400
Thorium (ThO <sub>2</sub> ) .....	lb.	29,014	55,087	—	—
Tin .....	lb.	288,427	470,136	281,000	531,100
Tungsten (WO <sub>3</sub> ) .....	lb.	..	..	..	..
Uranium (U <sub>3</sub> O <sub>8</sub> ) .....	lb.	7,707,735	53,150,657	8,021,000	50,237,000
Yttrium (Y <sub>2</sub> O <sub>3</sub> ) .....	lb.	85,443	671,500	73,000	657,000
Zinc .....	lb.	2,415,248,550	367,842,352	2,422,597,200	385,919,600
Total metallics .....	...	..	2,378,714,025	..	3,115,462,400
<b>Non-metallics</b>					
Arsenious oxide .....	lb.	339,875	34,000	200,000	20,000
Asbestos .....	ton	1,611,168	195,211,101	1,654,000	215,270,000
Barite .....	ton	143,230	1,379,752	236,000	2,140,000
Diatomite .....	ton	..	..	..	..
Feldspar .....	ton	12,385	301,375	11,000	311,000
Fluorspar .....	ton	..	3,036,931	..	4,185,000
Gem stones .....	lb.	28,332	44,635	28,000	45,000
Grindstone .....	ton	—	—	—	—
Gypsum .....	ton	6,373,648	14,995,150	6,442,000	14,956,000
Helium .....	Mcf.	..	..	..	..
Iron oxides .....	ton	—	—	—	—
Lithia .....	lb.	—	—	—	—
Magnesitic dolomite, brucite .....	ton	..	3,209,170	..	3,600,000
Mica .....	lb.	—	—	—	—
Nepheline syenite .....	ton	500,571	5,935,239	491,000	6,147,000
Nitrogen .....	Mcf.	..	..	..	..
Peat moss .....	ton	330,174	9,562,123	317,000	9,410,000
Potash, (K <sub>2</sub> O) .....	ton	3,492,001	69,382,516	3,424,000	116,402,000
Pyrite, pyrrhotite .....	ton	376,159	2,219,362	325,700	1,849,000
Quartz .....	ton	2,300,374	6,279,792	2,902,000	8,610,000
Salt .....	ton	4,657,765	30,406,109	5,052,000	34,248,000
Soapstone and talc <sup>2</sup> .....	ton	75,850	1,097,568	75,000	1,183,000
Sodium sulphate .....	ton	518,299	8,051,627	478,000	7,611,000

### Canada's Mineral Production, by Kind, 1969 and 1970 – Concluded

	1969		1970 <sup>1</sup>	
	Quantity	Value in Dollars	Quantity	Value in Dollars
<b>Non-metallics</b>				
Sulphur, in smelter gas ..... ton	676,189	7,953,011	708,800	7,282,000
Sulphur, elemental ..... ton	2,973,506	60,725,726	3,779,850	30,710,800
Titanium dioxide, etc. .... ton	..	30,363,558	..	34,470,000
Total non-metallics .....	...	450,188,745	...	498,449,800
<b>Mineral fuels</b>				
Coal ..... ton	10,671,879	50,578,283	16,047,000	80,506,000
Natural gas ..... Mcf.	1,977,838,205	262,855,588	2,295,278,000	350,953,000
Natural gas by-products ..... bbl.	66,724,769	137,919,025	77,595,000	159,583,000
Petroleum, crude ..... bbl.	410,989,930	1,014,570,734	455,382,000	1,126,999,000
Total fuels .....	...	1,465,923,630	...	1,718,041,000
<b>Structural materials</b>				
Clay products (bricks, tile, etc.) .....	...	51,165,915	...	44,059,000
Cement ..... ton	8,250,032	162,091,044	8,065,000	160,440,000
Lime ..... ton	1,634,862	19,239,296	1,626,000	19,019,000
Sand and gravel ..... ton	201,581,498	122,159,146	194,100,000	117,400,000
Stone ..... ton	67,477,012	88,186,262	70,700,000	95,850,000
Total structural materials .....	...	442,841,663	...	436,768,000
<b>Grand total</b> .....	...	<b>4,737,668,063</b>	...	<b>5,768,721,200</b>

<sup>1</sup>Preliminary estimates.<sup>2</sup>Includes pyrophyllite.

. Figures not available.

.. Figures not appropriate or not applicable.

– Nil or zero.

### Canada's Mineral Production, by Class, 1960-70

Year	Metals	Non-metals	Fossil fuels	Structural materials	Total
	Millions of dollars				
1960.....	1,407	198	566	323	2,493
1961.....	1,387	210	674	331	2,603
1962.....	1,496	217	770	356	2,840
1963.....	1,510	253	885	379	3,027
1964.....	1,702	287	973	403	3,365
1965.....	1,908	327	1,045	434	3,714
1966.....	1,985	363	1,152	481	3,980
1967.....	2,285	406	1,260	455	4,406
1968.....	2,493	447	1,343	443	4,725
1969.....	2,379	450	1,466	443	4,738
1970 <sup>1</sup> .....	3,115	498	1,718	437	5,769

<sup>1</sup>Preliminary estimates.



The Algom Quirke Mine at Elliot Lake, Ont.

Canada’s Mineral Production, by Province, 1968-70

Province	1968		1969		1970 <sup>1</sup>	
	Value in Dollars	Per cent	Value in Dollars	Per cent	Value in Dollars	Per cent
Newfoundland .....	309,711,994	6.6	256,935,937	5.4	358,350,100	6.2
Prince Edward Island .....	976,742	—	451,500	—	500,000	—
Nova Scotia .....	56,939,905r	1.2	58,631,575	1.2	58,557,990	1.0
New Brunswick .....	88,452,486r	1.9	94,592,565	2.0	101,192,420	1.8
Quebec .....	725,077,850r	15.4	718,366,119	15.2	798,565,390	13.8
Ontario .....	1,355,628,670	28.7	1,223,380,337	25.8	1,631,978,500	28.3
Manitoba .....	209,625,533	4.4	246,340,849	5.2	333,261,820	5.8
Saskatchewan .....	357,173,719	7.6	344,815,077	7.3	392,507,660	6.8
Alberta .....	1,091,766,867r	23.1	1,205,308,015	25.5	1,393,503,480	24.1
British Columbia .....	389,313,454r	8.2	434,272,656	9.2	495,582,430	8.6
Yukon .....	21,365,555	.5	35,402,563	.7	79,642,350	1.4
N.W. Territories .....	115,636,016	2.4	119,170,870	2.5	125,079,060	2.2
Totals .....	4,721,668,791r	100.0	4,737,668,063	100.0	5,768,721,200	100.0

<sup>1</sup> Preliminary estimates  
r Revised





The atomic absorption spectrophotometer is used in the Mines Branch of the Department of Energy, Mines and Resources to determine the various elements in sample rocks in solution.

## Coal

The year 1970 again showed two very marked and differing trends at work within the Canadian coal mining industry. In the eastern provinces of New Brunswick and Nova Scotia coal production continued to contract owing to the influence of rising costs, reduced government financial aid, and competition from coal imported from the United States. However, in terms of tonnage mined, the position in western Canada dramatically changed as the industry commenced shipments of coking coal to Japan, and as the requirements for coal at thermal generating plants continued to grow apace. The Japanese steel industry's increasing needs for high-grade coking coal have resulted in the signing within the last few years of long-term contracts calling for the delivery of over 200 million tons in the next 15 years. Significant deposits of such coals are to be found in Alberta and British Columbia, but to ensure a constant supply, it has been necessary to invest heavily in equipment at the various mines, in transportation facilities between the mines and the port, and in developing deep-sea terminals on the west coast capable of handling the tonnages involved. Whereas recent exports to Japan have been slightly over 1 million tons per annum, the 1970 figure reached 4.4 million tons, and the next few years should see an increase to about 20 million tons annually.

In Alberta and Saskatchewan low cost, open-pit sub-bituminous and lignite mines are expected to continue to supply increasing amounts of coal to thermal



Trucks are loaded with coal by a giant-sized front-end loader at the Cardinal Coal Mine, Luscar, Alta.

electric installations, as the development of the few remaining hydro sites cannot by itself meet the growing demand for electrical energy.

Canadian production of coal in 1970 increased to 16.0 million tons, 50.4 per cent or 5,375,000 tons more than for 1969. Excluding subvention payments, the preliminary value of this production amounted to approximately \$81 million, a rise from the 1969 value of \$51 million. Imports, 90 per cent of which go to steel mills and thermal-electric generating plants in Ontario, reached 19,400,000 tons, while exports amounted to 4,400,000 tons.

**Production of Coal, by Province, 1969 and 1970**

	1969	1970
	Short tons	
Nova Scotia .....	2,621,330	2,128,000
New Brunswick .....	701,952	397,000
Saskatchewan .....	2,020,105	3,776,000
Alberta .....	4,426,060	6,616,000
British Columbia .....	902,432	3,130,000
<b>Total Canada .....</b>	<b>10,671,879</b>	<b>16,047,000</b>

## Petroleum and Natural Gas

The petroleum industry is Canada's leading mineral producer: it extracted about \$1,637,535,000 worth of hydrocarbon products in 1970, an increase of 16.2 per cent over 1969. Crude oil, Canada's most important mineral, contributed \$1,126,999,000 (455,382,000 barrels) to this total. Natural gas production accounted for \$350,953,000 (2,295,278 million cubic feet) and pentanes, propane, and butanes for \$159,583,000 (77,595,000 barrels). In addition, elemental sulphur as a by-product of gas plants was valued at \$30,710,800 (for 3,779,850 short tons). Alberta accounted for 79 per cent of all production; Saskatchewan for almost 13 per cent; British Columbia for 6 per cent; and all the other provinces for almost 2 per cent.

Production of all commodities increased in 1970. The production of synthetic crude increased by 21.2 per cent and that of natural gas by 15.6 per cent. Canada exports large quantities of natural gas and crude petroleum to the United States, which is normally its market. In 1970 natural gas exports amounted to 768,112,547 Mcf. (thousand cubic feet) with a value of \$205,988,000. This was an increase of 14.7 per cent over exports in 1969, and the demand in the United States for natural gas continues to grow. Canada exported 240,893,633 barrels of crude oil valued at \$649,075,000 in 1970, an increase of 22.1 per cent over the figure for 1969. Imports amounted to 208,362,691 barrels, but Canada became a net exporter for the first time in 1968. Refineries located east of the "energy line" (a line running from Pembroke south to Brockville, Ont.) operate on imported crude oil. This is supplied mainly by Venezuela, but some comes from the Middle East

Imperial Oil's East St. Paul refinery near Winnipeg, Man.







At Inuvik in the Northwest Territories the laying of oil pipeline is tested. The melting of the permafrost must be guarded against.

and Africa. Canadian crude, mostly from western Canada, is used west of the energy line.

Total sales of refined petroleum products were 509,985,161 barrels in 1970, comprising 166,951,127 barrels of gasoline, 167,973,577 barrels of middle distillates, 109,842,634 barrels of heavy fuel oils, and 65,217,823 barrels of lubricating oils and grease, asphalt, and other products.

The movement of oil and natural gas necessitates large pipeline systems to carry these products to many parts of the continent. Consequently, oil and gas pipelines have become a major form of transportation. In 1970 the transportation of crude oil and its equivalent, liquefied petroleum gases, and refined petroleum products amounted to 368,000 million pipeline barrel miles, up 15 per cent from 1969; and that of natural gas to 1,268,000 million Mcf (thousand cubic feet) miles, an increase of 20 per cent in a year. This increase was a direct result of the heightened demand for natural gas.

In 1969 the total operating and capital expenditures of the petroleum industry amounted to \$1,405,489,000. The industry has made great efforts to find new reserves and increase its production of hydrocarbon products since 1961, when its investment was only \$716,158,000. In 1969 geological and geophysical work accounted for \$155,195,000 of the total; \$241,343,000 was spent on acquiring land or leases; \$269,947,000 on exploratory and development drilling; \$238,100,000 on capital additions; \$217,549,000 on field, well, and natural-gas plant operations; and \$293,569,000 on royalties, taxes, and other miscellaneous expenditures. Seventy-two per cent of all expenditure, amounting to \$1,011,362,000 was in

Alberta, 10 per cent in Saskatchewan, and 8 per cent in British Columbia.

There has been an enormous increase of geological and geophysical exploration in the Northwest Territories, in the Arctic Islands, and off the coasts of Canada in recent years. Panarctic Oil, a joint venture of the federal government and private investors, has found gas on Melville and King Christian Islands and Imperial Oil has discovered oil in the Mackenzie Delta. As a result, many companies that have large holdings in these areas have increased their exploratory work. Seismic, geological, and geophysical surveys have indicated that the potential Canadian conventional oil reserves are 120,800 million barrels, including 25,000 million off the east coast. The Athabasca tar sands have an estimated 300,000 million barrels of synthetic crude oil recoverable by mining or thermal processes. Operators in the tar sands seem to have solved many of the technical problems that originally plagued them.

## Electricity

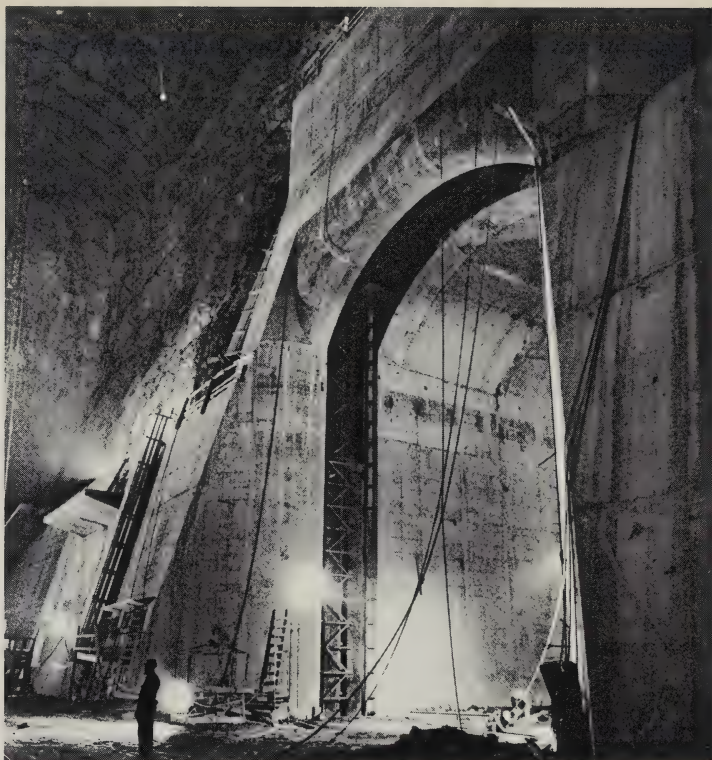
Canada's electrical power development has grown steadily at a remarkable rate since the beginning of this century. A modest 133,000 kilowatts of generating capacity in 1900 had increased to some 42,800,000 kw. by the end of 1970.

Although water power traditionally has been the main source of electrical

The Mica Dam in British Columbia is scheduled for completion in 1973. This dam will have a capacity of two million kilowatts.







One of the east tailrace inlet portals of the Churchill Falls project, where water from the surge chamber enters the 5,500-foot-long tunnel. The doors measure 60 ft. by 45 ft. wide.

energy in Canada and still is, thermal sources are becoming more important and this trend is expected to continue. The choice between the development of a hydro-electric power site and the construction of a thermal generating station must take into account a number of complex considerations, the most important of which are economic. The heavy capital costs involved in constructing a hydro-electric project are offset by maintenance and operating costs considerably lower than those for a thermal plant. The long life of a hydro plant and its dependability and flexibility in meeting varying loads are added advantages. Also important is the fact that water is a renewable resource. The thermal station, on the other hand, can be located close to areas where power is needed, with a consequent saving in transmission costs. However pollution problems at these plants are coming to be recognized as a complicating factor.

The marked trend towards the development of thermal stations which became apparent in the 1950's can be explained to some extent by the fact that in many parts of Canada, most of the hydro-electric sites within economic transmission distance of load centres had been developed and planners had to turn to other





A view of the towers and cables for the 735,000-volt transmission lines which carry the energy produced by Quebec's Manicouagan-Outardes hydro complex southward to Quebec City and Montreal.

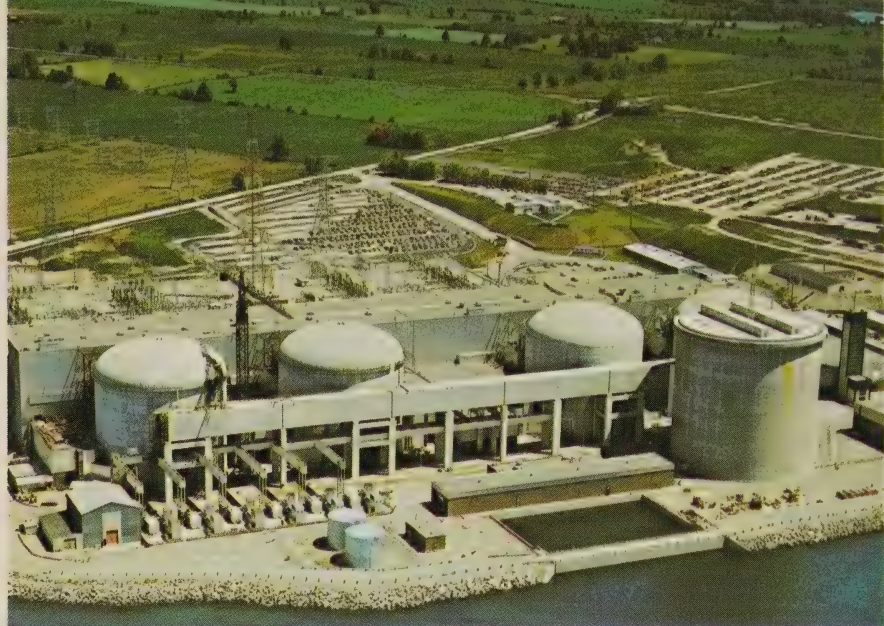
sources of electrical energy. More recently, however, advances in extra-high-voltage transmission techniques have given impetus to the development of hydro power sites previously considered too remote. Nevertheless, thermal stations should be the more important of the two sources in the long run.

### **Water Power Resources and Developments**

Substantial amounts of water power have been developed in all provinces except Prince Edward Island, where there are no large streams. The resources of Newfoundland are estimated to be considerable; topography and run-off favour hydro-electric power development. In fact, the most dramatic development of any single hydro project is now taking place at Churchill Falls in Labrador. When this project is completed in the late 1970's, the capacity of the plant will reach 5,225,000 kw., thus making it the largest single generating plant of any type in the world. The water power of Nova Scotia and New Brunswick, small in comparison with that of other provinces, is nonetheless a valuable source of energy. The numerous moderate-sized rivers provide power for the cities and a potential source of power for developing the timber and mineral resources. Quebec is richest in water power resources, with over 40 per cent of the total for Canada, and has the most developed capacity. The largest single hydro-electric installation in Canada is Hydro-Québec's 1,574,260 kw. Beauharnois development on the St. Lawrence River. Others are the Bersimis 1 development, with a capacity of 912,000 kw., and the 742,500 kw. Chute des Passes plant of the Aluminum Company of Canada, Ltd. Potentially largest will be Hydro-Québec's Manicouagan-Outardes project, which will produce 5,540,000 kw. on the two rivers. Almost all of the sizable water power potential in Ontario within easy reach of demand centres has been developed, and planners are looking to more remote sites. Most of the hydro-electric power produced in the province comes from the Hydro-Electric Power Commission of Ontario, the largest public utility in Canada. Its chief stations are on the Niagara River at Queenston, with total generating capacities of 1,804,200 kw. Manitoba is the most generously endowed of the Prairie Provinces, with immense potential on the Winnipeg, Churchill, Nelson, and Saskatchewan Rivers. Saskatchewan's central and northern regions can eventually be supplied from the Churchill, Fond du Lac, and Saskatchewan Rivers. In Alberta, most of the developments are located on the Bow River and its tributaries. British Columbia ranks second in terms of potential water power resources, and is third in installed generating capacity. The current development of the Peace and Columbia Rivers will provide immense power resources in the future. In the Yukon Territory and the Northwest Territories, water power is of special importance in the development of mining areas, such as Mayo and Yellowknife. In the Yukon, most resources are on the Yukon River and its tributaries. Although not yet thoroughly surveyed, the rivers flowing into Great Slave Lake, and the South Nahanni River draining into the Mackenzie River have considerable potential.

### **Conventional Thermal Power**

Some 90 per cent of all conventional thermal power generating equipment in



Ontario Hydro's thermo-nuclear generating station at Pickering, Ont.

Canada is driven by steam turbines and the remainder of the load is carried by gas turbine and internal combustion equipment. The accompanying Table shows that Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Saskatchewan, Alberta, and the Northwest Territories depend on thermal stations for most of their power requirements. The abundance of Quebec's wealth of water power has so far limited the application of thermal power in that province to local use but here too there is an increasing emphasis on thermal development. Manitoba and British Columbia both have substantial amounts of thermal capacity but current development is still of hydro electricity.

### Installed Hydro- and Thermal-Electric Generating Capacity, at December 31, 1970<sup>1</sup>

Province or Territory	Hydro	Thermal	Total
	Thousands of kilowatts		
Newfoundland .....	978	271	1,249
Prince Edward Island .....	—	78	78
Nova Scotia .....	163	769	932
New Brunswick .....	570	632	1,202
Quebec .....	13,288	758	14,046
Ontario .....	6,797	6,920	13,717
Manitoba .....	1,319	473	1,792
Saskatchewan .....	567	961	1,528
Alberta .....	616	2,052	2,668
British Columbia .....	3,948	1,465	5,413
Yukon Territory .....	26	25	51
Northwest Territories .....	35	47	82
<b>Canada .....</b>	<b>28,307</b>	<b>14,451</b>	<b>42,758</b>

<sup>1</sup> Preliminary figures.



## Nuclear Thermal Power

Development of commercial electric power generation in thermal plants using the heat generated by nuclear reactors is one of the major contributions of Canada to energy resource technology. This development has centred around the CANDU reactor which uses a natural uranium fuel with a heavy water moderator. Heavy water as a moderator provides a high energy yield and facilitates the handling of spent fuel. The first experimental reactor went into use in 1962 at Rolphton, Ont., with a capacity of 20,000 kw. Since then, four major nuclear projects have been undertaken. The first nuclear plant is situated at Douglas Point on Lake Huron. It consists of a single unit, completed in 1967, with a capacity of 220,000 kw. The second project is a four-unit 2,000,000-kw. capacity plant being built at Pickering east of Toronto. Its four units are scheduled for service in 1971 to 1974. Both the Douglas Point and Pickering plants use heavy water as a coolant. The third nuclear plant is to be a 250,000-kw. unit situated at Gentilly, Que., using boiling light water as a coolant. The fourth plant is the 3,000,000-kw. Bruce Station at Douglas Point, Ont., scheduled for completion by 1978.

## Power Generation and Utilization

In 1970, Canada's generating facilities produced 203,740 million kilowatt hours of electric energy, 77 per cent in hydro-electric stations, and the rest in thermal stations. Energy exported to the United States exceeded by 2,402 million kwh. the energy imported, bringing the total available to Canadian users to 201,338 million kwh. In 1969 industry used about 58 per cent of the total energy available in Canada; homes and farms accounted for 21 per cent, and commercial customers for 12 per cent. Average domestic and farm consumption continues to rise year by year. In 1969 it was 6,834 kwh., ranging from a low of 3,565 kwh. in Prince Edward Island to a high of 8,374 kwh. in Manitoba. The average annual bill for domestic and farm customers was \$102.65.

A scientist manipulates controls outside the hot cell at Atomic Energy of Canada, Ottawa, Ont.



# Business, Finance, and Industry

## Capital Expenditure

A sustained rising income in Canada depends upon, among other things, the capacity to produce and sell goods and services. This capacity and its efficiency, in turn, depend largely on the amounts spent on investment in new mines, factories, stores, power generating facilities, communications and transportation equipment, hospitals, schools, roads, parks, and all other forms of capital which help produce income-creating goods and services.

Surveys of these capital expenditures are carried out at regular intervals each year. On each occasion statistics are published for expenditures on housing, non-residential construction, and machinery and equipment by all sectors of the Canadian economy.

A survey carried out early in 1971 indicated that capital expenditures were expected to reach a total of \$19,321 million during that year. This represents an increase of almost 10 per cent over the 1970 total of \$17,640 million. The percentage increase expected in 1971 is significantly higher than the year-to-year increase of 4 per cent recorded for 1970. However, as in any expectations, conditions during the year may cause changes in capital spending plans.

The following Table shows that expected capital spending in 1971 by all major industrial sectors of the economy will be moving upwards, except for manufacturing. The greatest rate of growth is likely to be in mining with an increase of 27 per cent, followed by housing with 24 per cent. The lower level of manufacturing investment indicated for 1971 follows two years of rapid expansion, but it is still larger, however, than any preceding year, with the exception of 1970. All levels of government anticipate increases in their capital spending in 1971 while expenditures by non-profit institutions are expected to decline marginally.



**CAPITAL EXPENDITURES**  
**Summary by Sectors, 1969 to 1971<sup>1</sup>**  
(Millions of dollars)

Item No.	Type of Enterprise	Construction	Machinery and Equipment	Total
1	Agriculture and fishing .....	1969 249	730	979
		1970 227	636	863
		1971 231	681	912
2	Forestry .....	1969 52	54	106
		1970 49	43	92
		1971 52	47	99
3	Mining, quarrying and oil wells .....	1969 888	289	1,177
		1970 906	321	1,227
		1971 1,159	404	1,563
4	Manufacturing .....	1969 772	1,828	2,600
		1970 989	2,173	3,162
		1971 888	2,096	2,984
5	Utilities .....	1969 1,719	1,586	3,305
		1970 1,962	1,626	3,588
		1971 2,346	1,686	4,032
6	Construction industry .....	1969 14	250	264
		1970 15	250	265
		1971 15	260	275
7	Housing .....	1969 3,384	—	3,384
		1970 3,077	—	3,077
		1971 3,806	—	3,806
8	Trade—Wholesale and retail .....	1969 197	313	510
		1970 203	319	522
		1971 189	311	500
9	Finance, insurance and real estate .....	1969 404	122	526
		1970 423	141	564
		1971 422	143	565
10	Commercial services .....	1969 103	517	620
		1970 128	499	627
		1971 137	544	681
11	Institutional services .....	1969 1,134	209	1,343
		1970 1,146	222	1,368
		1971 1,116	227	1,343
12	Government departments .....	1969 1,908	205	2,113
		1970 2,086	199	2,285
		1971 2,317	244	2,561
13	<b>Totals (items 1 to 12) .....</b>	<b>1969 10,824</b>	<b>6,103</b>	<b>16,927</b>
		<b>1970 11,211</b>	<b>6,429</b>	<b>17,640</b>
		<b>1971 12,678</b>	<b>6,643</b>	<b>19,321</b>

<sup>1</sup>The 1970 and 1971 estimates are subject to revision.

Source: *Private and Public Investment in Canada, Outlook 1971 and Regional Estimates* (DBS Bull. No. 61-205).

Capital spending is expected to be higher in all major regions of Canada; increases range from 21 per cent in British Columbia and 13 per cent in Quebec to 9 per cent in Ontario, 6 per cent in the Atlantic Provinces, and about 1 per cent in the Prairie region. Individual projects and special regional conditions are often reflected in changes in regional spending in any one year. For example, in the manufacturing sector in Ontario, an expansion program in steel-producing and non-ferrous and petroleum refining facilities in 1971 is more than offset by a



decline in spending on transportation equipment plants. With a number of initial major projects relating to the Automotive Agreement rationalization is now complete and capital spending of the transportation equipment industry is expected to decline sharply in 1971. In the Atlantic region, a sharp decline in spending by utilities in Newfoundland and manufacturing in Nova Scotia is more than offset by spending on sizable projects by the mining and manufacturing sectors in Newfoundland and government departments in New Brunswick and Newfoundland. An increase in spending on electric power projects has contributed significantly to the higher level of outlays in Quebec, Ontario, Alberta, and British Columbia and increased investment in oil and gas pipeline facilities to the expenditures of Ontario, Saskatchewan, and British Columbia. The rate of house-building is expected to be strong in all regions.

### CAPITAL EXPENDITURES Summary by Provinces 1969 to 1971<sup>1</sup> (Millions of dollars)

Item No.	Province		Construc- tion	Machinery and Equipment	Total
1	Newfoundland.....	1969	284	111	395
		1970	392	120	512
		1971	459	106	565
2	Prince Edward Island .....	1969	26	18	44
		1970	34	20	54
		1971	43	21	64
3	Nova Scotia .....	1969	398	154	552
		1970	394	181	575
		1971	395	190	585
4	New Brunswick .....	1969	229	163	392
		1970	260	194	454
		1971	290	187	477
5	Quebec .....	1969	2,082	1,294	3,376
		1970	2,173	1,215	3,388
		1971	2,538	1,295	3,833
6	Ontario .....	1969	3,825	2,482	6,307
		1970	4,046	2,811	6,857
		1971	4,571	2,891	7,462
7	Manitoba .....	1969	640	261	901
		1970	582	311	893
		1971	599	263	862
8	Saskatchewan .....	1969	459	296	755
		1970	350	273	623
		1971	399	250	649
9	Alberta .....	1969	1,348	566	1,914
		1970	1,427	527	1,954
		1971	1,445	552	1,997
10	British Columbia <sup>2</sup> .....	1969	1,533	758	2,291
		1970	1,553	777	2,330
		1971	1,939	888	2,827
11	Canada .....	1969	10,824	6,103	16,927
		1970	11,211	6,429	17,640
		1971	12,678	6,643	19,321

<sup>1</sup> Actual expenditures 1969, preliminary actual 1970, intentions 1971.

<sup>2</sup> Includes Northwest Territories and Yukon.

## Housing

Canadian housing activity in 1970 was characterized by an unprecedented emphasis on the production of housing for persons in the lower-income ranges. Federal government lending programs significantly influenced the direction of residential construction with the result that approximately one quarter of all the dwellings produced were for low-income groups.

Housing starts totalled 190,528 and, although this figure represents a decline from the previous year, it was the third highest level on record. Towards the end of 1969, inflationary pressures were restricting the supply of money for housing and causing a corresponding rise in interest rates. These factors adversely affected the supply of mortgage funds and the demand for them. These conditions continued during the first half of 1970 but a massive intervention of federal funds



Apartment dwellers in northern Toronto overlook the Don Valley.



Town houses in Ottawa, Ont., and North Bay, Ont., the latter for senior citizens. "Evolutionary" duplexes in Longueuil, Que., whose interior walls are movable.





coupled with a general improvement in the availability of mortgage money in the private sector brought the year's housing starts to a satisfactory level.

NHA activity by the approved lenders steadily increased in the latter stages of the year as interest rates stabilized. A record \$853 million of NHA-insured loans was made, resulting in the construction of 53,029 dwellings. Over-all participation in the private sector was down however, since conventional lending showed a marked decline from the previous year's performance. Conventional lending was at \$1,700 million in 1970, a considerable decrease from the total of \$2,100 million in 1969. This change in pattern can be explained by the desire of the approved lenders to seek the security of NHA insurance, particularly since removal of the ceiling on NHA interest rates made them more attractive to lenders.

The most significant factor during the year was the sharp increase in the number of housing units started as a result of direct financial assistance provided by Central Mortgage and Housing Corporation whose capital budget was an unparalleled \$1,100 million. In 1969, 26,400 units were financed by CMHC while in 1970 this total more than doubled to 57,000. Of these totals, 47,019 units were for low-income families in 1970; there were only 16,693 such units started in 1969.

These figures clearly indicate the federal government's intention to give high priority to increasing the number of good accommodations for families of modest means. To satisfy this objective, two special programs were initiated. First, CMHC's capital budget included \$200 million for a program designed to encourage the development of new ways of providing low-cost housing. The construction of some 14,528 units was authorized. These units were included in 84 selected projects and by December 31, 1970, 9,743 units had been started.

A second special program involving \$240 million was developed in August 1970 to give further stimulus to the housing market. As a result of the commitment of these funds, nearly 20,000 dwellings, for low to moderate income families, had been started by the end of the year.

Under the National Housing Act, several types of financial assistance are available for projects directly related to the improvement of housing and living conditions. In 1970, student housing, Indian and Métis housing, land assembly, and sewage treatment were specific examples of the varied nature of projects that were eligible for financial assistance.

A total of \$36 million in loans was approved to provide 4,563 beds for single students and 588 apartment units for married students and their families. The federal government can also share, with a province, the costs of assembling and servicing raw land for residential development. Five projects were undertaken in 1970 to provide 520 residential building lots and approval was also given for the acquisition of 542 acres of land to be developed for housing purposes. In addition, 90 per cent loans can be given to provinces, municipalities, and their agencies to cover the cost of acquiring and developing land. In 1970, 32 loans amounting to \$14.3 million were approved.

In summary, Canadian housing activity in 1970 focused on the production of low-income housing with much of the activity in other areas directed toward this objective. The 1971 CMHC budget was similar to that for 1970 and with increased lender support, it should have been a buoyant year for housing, with starts well above the 200,000 level.

## **Government Finance**

### **Federal Finance**

The scope of the responsibilities assigned to the federal government by the British North America Act, together with the programs that have been introduced in the exercise of these responsibilities, have grown considerably since 1867 and have also become very complex. As a consequence, intricate financial arrangements between federal, provincial, and local governments have been developed to raise and share the revenues required to meet the greatly increased expenses faced by each level of government. The Federal-Provincial Fiscal Arrangements Act authorizes tax collection agreements and certain fiscal payments to provinces. "Established Programs" legislation of 1965 provides for the voluntary withdrawal by provincial governments from certain federal-provincial joint programs in exchange for increased tax abatements and tax equalization payments. Quebec is the only province to have availed itself of this option.

Federal government revenue, which excludes that collected on behalf of provincial governments, continues to come essentially from taxation. From fiscal year 1958-59 through fiscal year 1968-69, taxes have provided approximately 90 per cent of the gross general revenue. During this period, the revenue from corporate and individual income tax and general sales tax has ranged from 67 to 72 per cent of the gross general revenue. Corporate income-tax revenue, as a percentage of gross general revenue, has fallen from a high of 21 per cent in 1958-59 to 18 per cent in 1968-69, and individual income-tax revenue has risen from 29 to 36 per cent.

The largest items of federal government expenditure continue to be those related to social welfare, defence, charges on the national debt, and unconditional transfer payments to provincial and local governments. The cost of social welfare, as a proportion of the gross general expenditure, continued to rise and accounted for 23 per cent of the latter in 1968-69 against 19 per cent in 1958-59. Cost of defence services fell from 29 to 14 per cent over the same period, while debt charges and unconditional transfer payments to provincial and local governments remained fairly stable, ranging from 11 to 12 per cent and from 7 to 8 per cent respectively.

During 1968-69 the major social welfare costs were the payment of \$1,541 million in old-age security, \$616 million in family allowances, and \$298 million in conditional shared-cost program grants to provincial governments.

The net debt of the government of Canada was \$17,336 million as of March 31, 1969, an increase of \$577 million over the previous year; it amounted to 23.8 per cent of the gross national product. Unmatured bond debt outstanding at March 31, 1969, was \$19,255 million, while treasury bills outstanding amounted to \$2,840 million.

### **Federal-Provincial Programs**

Federal government expenditures on joint federal-provincial programs have increased consistently throughout the past decade. The most common type,

**Gross General Revenue and Expenditure  
of the Federal Government  
Year Ended March 31, 1969**

Source	Revenue \$'000	Per- centage
<b>Taxes—</b>		
Income—		
Corporations.....	2,213,040	18.4
Individuals .....	4,334,430	36.0
On certain payments and credits to non-residents .....	205,566	1.7
General sales.....	2,097,963	17.4
Excise duties and special excise taxes—		
Alcoholic beverages .....	321,041	2.7
Tobacco .....	497,517	4.1
Other commodities and services .....	66,148	0.6
Customs import duties .....	761,681	6.3
Estate taxes .....	112,377	0.9
Other .....	9,428	0.1
<b>Total Taxes .....</b>	<b>10,619,191</b>	<b>88.2</b>
Privileges, licences and permits .....	28,923	0.2
Sales and services .....	235,074	2.0
Fines and penalties .....	5,568	0.1
Interest and Foreign Exchange Fund net profit .....	497,090	4.1
Own enterprises— Remitted profits .....	200,253	1.7
Bullion and coinage .....	78,147	0.6
Postal service .....	363,487	3.0
Other revenue (including conditional transfers from provincial governments)...	11,071	0.1
<b>Total Net General Revenue .....</b>	<b>12,038,804</b>	<b>100.0</b>
Function	Expenditure \$'000	Per- centage
General government services .....	688,033	5.4
Protection of persons and property .....	237,813	1.9
Transportation and communication .....	592,765	4.7
Health .....	750,831	5.9
Social welfare .....	2,852,144	22.5
Recreational and cultural services .....	86,060	0.7
Education .....	592,495	4.7
Natural resources and primary industries .....	693,656	5.5
Trade and industrial development .....	195,885	1.5
National capital region planning and development .....	19,928	0.2
Defence services .....	1,796,994	14.2
Veterans' pensions and other benefits.....	427,897	3.4
Debt charges (excluding retirements) .....	1,486,951	11.8
Own enterprises— Payments in respect of deficits .....	224,995	1.8
International co-operation and assistance .....	149,214	1.2
Unconditional transfers to provincial governments—		
Statutory subsidies .....	31,744	0.2
Federal-provincial fiscal arrangements .....	639,272	5.0
Compensation due to withdrawal from joint programs .....	186,925	1.5
Share of income tax on public utilities .....	20,984	0.2
Grants in lieu of taxes on federal property (for local purposes) .....	1,320	—
Unconditional transfers to local governments—		
Grants in lieu of taxes .....	46,017	0.4
Special grants .....	1,611	—
Other expenditure .....	928,446	7.3
<b>Total Cost of Services Provided .....</b>	<b>12,651,980</b>	<b>100.0</b>



### Finances of the Federal Government Years Ended March 31, 1868-1969<sup>1</sup>

Year	Total Budgetary Revenue	Per Capita Rev- enue <sup>1</sup>	Total Budgetary Expenditure	Per Capita Expen- diture <sup>2</sup>	Net Debt at End of Year	Net Debt per Capita <sup>3</sup>
	\$	\$	\$	\$	\$	\$
1868 .....	13,687,928	3.95	13,716,422	3.96	75,757,135	21.58
1871 .....	19,375,037	5.34	18,871,812	5.21	77,706,518	21.06
1881 .....	29,635,298	6.96	32,579,489	7.66	155,395,780	35.93
1891 .....	38,579,311	8.07	38,855,130	8.13	237,809,031	49.21
1901 .....	52,516,333	9.91	55,502,530	10.47	268,480,004	49.99
1911 .....	117,884,328	16.87	121,657,834	17.40	340,042,052	47.18
1921 .....	436,888,930	51.06	528,899,290	61.82	2,340,878,984	266.37
1931 .....	357,720,435	35.04	441,568,413	43.26	2,261,611,937	217.97
1941 .....	872,169,645	76.63	1,249,601,446	109.80	3,648,691,449	317.08
1951 .....	3,112,535,948	226.99	2,901,241,698	211.58	11,433,314,948	816.14
1952 .....	3,980,908,652	284.17	3,732,875,250	266.46	11,185,281,546	773.59
1953 .....	4,360,822,789	301.60	4,337,275,512	299.97	11,161,734,269	751.88
1954 .....	4,396,319,583	96.15	4,350,522,378	293.06	11,115,937,064	727.15
1955 .....	4,123,513,300	269.74	4,275,362,888	279.67	11,263,080,154	717.49
1956 .....	4,400,046,639	280.29	4,433,127,636	282.40	11,280,368,964	701.47
1957 .....	5,106,540,880	317.55	4,849,035,298	301.54	11,007,651,158	662.71
1958 .....	5,048,788,279	303.96	5,087,411,011	306.29	11,046,273,890	646.74
1959 .....	4,754,722,689	278.38	5,364,039,533	314.05	11,678,389,860	667.99
1960 .....	5,289,751,209	302.57	5,202,861,053	326.20	12,089,194,003	676.51
1961 .....	5,617,679,854	314.36	5,958,100,946	333.41	12,437,115,095	681.93
1962 .....	5,729,623,724	314.16	6,520,645,674	357.53	13,228,137,045	712.34
1963 .....	5,878,692,431	316.57	6,570,325,358	353.81	13,919,769,972	736.65
1964 .....	6,253,704,039	330.92	6,872,401,519	363.70	15,070,149,452	781.24
1965 .....	7,180,309,787	373.29	7,218,274,552	375.27	15,504,472,544	789.27
1966 .....	7,695,820,204	391.76	7,734,795,525	393.75	15,543,447,865	776.58
1967 .....	8,376,181,844r	418.49r	8,797,684,457r	439.55r	15,964,950,478	782.40
1968 .....	9,076,589,448	444.82	9,871,364,117	483.77	16,759,725,147	807.93
1969 .....	10,191,135,794	491.28	10,767,248,637	519.05	17,335,837,990	823.13

<sup>1</sup>These figures are derived from the Public Accounts of Canada and differ from those in the preceding table. Revenue and expenditure in this table are on a gross basis and net debt here represents the excess gross debt over net active assets.

<sup>2</sup>Based on estimated population on June 1 of the preceding year.

<sup>3</sup>Based on estimated population on June 1 of the same year.

r Revised.

administered by the provinces are called "conditional grant" programs. They receive financial support from the federal government, provided they are administered in accordance with conditions specified by that government. Various health and welfare programs come within this category. The Health Resources Fund Act, for example, provides that the federal government will set aside \$500 million to assist provinces in the acquisition, construction, or renovation of health training facilities during the period from January 1, 1966, to December 31, 1980. The terms of the Act provide that provinces are paid 50 per cent of the reasonable costs of projects approved by the Minister of National Health and Welfare. Projects that may qualify under this program include those related to medical schools, teaching



The Industrial Development Bank, established by Parliament in 1944, made loans of \$164.6 million in 1970 to help start, modernize, or expand small- and medium-sized businesses.

hospitals, and schools of nursing, dentistry, and pharmacy. Other programs provide that the federal government will share in the cost of allowances to the aged, blind or disabled. Joint programs also provide for federal assistance in respect of hospital care, medical care, fitness and amateur sport, and the development and strengthening of welfare services through general and professional training and research. A more recent example of the "conditional grant" program is that designed to promote regional economic development and expansion.

### Provincial Finance

Under the terms of the British North America Act, provincial governments can use "direct taxation within the province in order to the raising of a revenue for provincial purposes." Theoretically their powers of taxation are restricted in the sense that they cannot impose indirect taxes. In practice, however, provincial governments enjoy fairly wide taxing powers because of the judicial interpretation given to the concept of a direct tax. Over the years, the courts have held that a direct tax is one "which is demanded from the very person who it is intended or

## Estimated Gross Provincial Revenue in 1970-71

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
						Millions of dollars					
(1) Personal income tax .....	24.0	3.8	43.8	40.9	940.0	898.0	108.3	73.8	163.8	223.9	2,520.3
(2) Corporate income tax .....	9.4	1.1	11.6	9.0	175.0	457.0	32.6	18.7	55.4	73.6	843.4
(3) General sales tax .....	38.4	7.2	65.1	59.2	562.9	692.9	67.4	68.0	—	200.5	1,761.6
(4) Motor fuel tax .....	21.6	5.7	38.6	29.9	298.3	413.3	43.9	52.0	80.7	79.3	1,063.3
(5) Hospital insurance and medicare premiums ..	—	—	—	—	—	617.3	28.6	19.3	48.6	75.0	788.8
(6) Other provincial taxes .....	6.3	2.0	3.7	34.6	276.8	198.6	19.7	10.5	21.0	40.8	614.0
(7) Privileges, licences and permits .....	13.3	1.8	15.4	19.3	232.3	315.9	26.5	61.7	304.0	209.4	1,199.6
(8) Liquor profits .....	8.9	3.0	21.7	17.6	105.3	148.5	22.9	35.7	54.1	63.3	481.0
(9) Non-tax receipts from own sources .....	9.9	7.0	38.5	10.2	90.2	393.9	31.1	68.6	53.3	83.2	785.9
(10) Conditional transfers from other levels of government .....	115.6	27.5	116.1	112.7	338.9	822.4	132.9	116.7	220.8	222.5	2,226.1
(11) Unconditional transfers from other levels of government .....	101.4	22.8	96.6	85.5	765.4	38.4	47.2	46.0	18.7	1.8	1,223.8
<b>Total gross provincial revenue .....</b>	<b>348.8</b>	<b>81.9</b>	<b>451.1</b>	<b>418.9</b>	<b>3,785.1</b>	<b>4,996.2</b>	<b>561.1</b>	<b>571.0</b>	<b>1,020.4</b>	<b>1,273.3</b>	<b>13,507.8</b>

## Estimated Gross Provincial Expenditure in 1970-71

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
						Millions of dollars					
(1) General government .....	16.1	6.1	18.5	15.9	217.7	202.0	18.4	23.8	50.4	53.0	621.9
(2) Protection of persons and property .....	9.0	1.8	9.2	7.6	147.3	188.4	17.6	16.1	46.3	38.1	481.4
(3) Transportation and communications .....	52.4	10.4	75.1	68.8	345.1	511.9	49.6	80.3	102.3	151.0	1,446.9
(4) Health .....	79.4	15.6	182.5	81.6	960.5	1,536.0	183.5	157.5	320.0	381.6	3,998.2
(5) Social welfare .....	42.3	7.8	48.2	29.5	506.7	281.1	44.1	41.2	80.8	98.3	1,180.0
(6) Education .....	93.6	20.2	131.8	144.3	1,191.8	1,584.5	161.4	144.5	366.4	369.5	4,208.0
(7) Natural resources and primary industries .....	10.8	4.3	18.1	21.0	140.2	139.8	30.8	29.1	50.4	81.0	525.5
(8) Debt charges (exclusive of debt retirements) ..	32.5	8.1	63.3	33.9	195.5	326.5	22.7	44.4	11.5	1.0	739.4
(9) Unconditional transfers .....	2.7	0.6	9.3	18.7	148.1	52.0	10.6	—	41.0	47.6	330.6
(10) All other expenditure .....	72.2	4.8	15.3	17.7	166.8	282.6	17.8	24.0	59.8	32.9	693.9
<b>Total gross provincial expenditure .....</b>	<b>411.0</b>	<b>79.7</b>	<b>571.3</b>	<b>439.0</b>	<b>4,019.7</b>	<b>5,104.8</b>	<b>556.5</b>	<b>560.9</b>	<b>1,128.9</b>	<b>1,254.0</b>	<b>14,125.8</b>





A dozen Alberta communities are termed New Towns. These were built after the oil and gas discoveries brought populations to work in areas where facilities such as schools were lacking.

desired should pay it." This interpretation allows the provinces to tax all possible bases of imposition provided their taxes are levied in such a way as to be borne directly by a recipient of income if it is an income levy, by a holder of capital or by a succession beneficiary if it is a capital or succession levy, or by an ultimate purchaser or user if it is a sales or excise levy. The only taxes which the provinces may not raise are those which are expected to be passed on to other persons and are thus deemed to be indirect, such as import duties or sales and excise taxes imposed at other than the retail level of trade.

### **Federal-Provincial Fiscal Arrangements**

Since provinces vary greatly in size, population, and the nature and extent of their economic development, it follows that their fiscal capacity, that is, their capability to raise revenues and thus to provide public services, varies widely. Over the years, measures have been adopted by the federal government in consultation with the provinces to attenuate disparities of fiscal capacity among the provinces. These measures have been embodied in a series of federal-provincial fiscal arrangements which — besides redistributing part of the revenue collected by the federal government among the less affluent provinces in the form of equalization payments — have provided for certain agreements respecting the collection of the income and inheritance taxes.

The present federal-provincial fiscal arrangements became operative on April 1, 1967, and are scheduled to terminate on April 1, 1972. These arrangements are fairly complex but in essence they provide for a system of equalization under which payments are made to certain provinces to raise their revenues from various stipulated sources to a level that would prevail if calculated national average rates of return from these sources applied in these provinces. The arrangements also provide for special additional payments to the Maritime Provinces and incorporate collection agreements for the income taxes. These tax-collection agreements were originally to run for the same period as the arrangements. They were, however, extended indefinitely in 1968 subject to termination on due notice. Under the arrangements, certain provinces receive a substantial part of their revenues in the form of unconditional transfer payments, of which equalization accounts for a significant share.

## Local Government Finance

Local governments are established to provide services which their creators, the provincial and territorial governments, consider best administered at the local level. Although the extent to which these services are provided by local governments and the types of local governments providing the services vary widely, the services generally provided are protection (police, firemen, and the like), transportation (roads, airports, and some marine services), environmental health (water supply, sanitation, garbage and waste disposal), public health and welfare, environmental development (planning and zoning, housing), recreation, culture, and education. In addition, a number of municipalities provide such services as urban transit, electricity and gas distribution, and telephone communications through enterprises of their own creation generally called utilities.

Traditionally, local government services, apart from those provided by enterprises within their jurisdiction, have been financed by the levying of taxes on real property. Enterprises are usually financed from the proceeds of sales of their services. The real property tax, however, has proved inadequate in recent years to meet requirements for many additional services and for more elaborate types of existing services resulting from increased urbanization and the rising standard of living. As a result, real property taxation now accounts for about 85 per cent of revenues derived by local governments from their own sources but for slightly less than 50 per cent of their total revenues. Nearly 45 per cent of local government revenues consist of transfers from the other levels of government. Most of these transfers are made by the provincial and territorial governments to assist local governments to provide specific services. In 1970 gross general revenues of local governments in Canada (excluding enterprises) were estimated at \$7,786 million.

Nearly half the expenditures made by local governments are for the provision of education—principally primary and secondary schooling. Services to transportation account for about 12 per cent of expenditures, environmental health for 9 per cent, protection for 7 per cent, and the remaining functions for lesser percentages. In 1970 gross general expenditures of local governments in Canada (excluding enterprises) were estimated at \$8,292 million. Approximately 6.5 per cent of local government expenditures are for charges relative to debt. At the end of 1968 total local government debt amounted to about \$8,000 million.

Two further developments which are assuming increasing importance in local government finance should be noted. First, to enhance the borrowing capabilities of local governments a number of the provinces have established financing authorities to which local governments sell all or part of their new debenture issues. The financing authority then loans either the proceeds of its own issues, or funds borrowed from the Canada Pension Plan, to the local governments. In either case the aim is to enable local governments to borrow on terms more favourable than they could secure on the open market.

Second, a number of provinces have developed systems under which part of the real property taxation levied on owners (or, in Ontario, owners or tenants) is either rebated at the time of payment of taxes or is subsequently refunded to the taxpayer. The local governments are reimbursed by the provincial governments for these rebates or refunds.

## Banking and Savings

The Canadian dollar is a decimal currency with 100 cents to the dollar. Currency in the form of bills is issued by the Bank of Canada. The coinage—nickel coins in denominations of one dollar, 50 cents, 25 cents, 10 cents, and 5 cents and bronze 1-cent coins—is issued by the Royal Canadian Mint. At the end of 1970 Bank of Canada notes totalling \$3,106 million and coin totalling \$461 million were in circulation.

Although many economic transactions in Canada involve payments made in the form of Bank of Canada notes and coin, an increasing proportion of payments, and certainly virtually all large ones, are made by cheque. A cheque is an order addressed to a bank to pay a third person named in the cheque a specified amount out of the deposit account maintained at that bank by the person writing the cheque. Deposit liabilities held at the chartered banks are considered a convenient means of settling transactions and are usually thought of as money because they are generally accepted in settlement of debts.

The banks offer three types of chequable accounts: current accounts, personal chequing accounts on which no interest is paid, and chequable personal savings accounts on which interest is paid. There are also non-chequable savings accounts on which the banks pay a higher rate of interest. The banks as a group operate

Early 20th century banknotes form part of the Bank of Canada's collection of old money.





extensive facilities for clearing cheques drawn on one bank and cashed in another. On April 30, 1970, the chartered banks had 20,493,894 deposit accounts with an average deposit of \$1,283 in each account.

## Banks

There are nine chartered banks in Canada most of which are owned by a large number of individual Canadian shareholders. The majority of the banks have held banking charters (that is, licences from Parliament) for many years, but two new banks have been established in the past four years. In August 1970, however, one of the new banks merged with another longer established bank. Each of the banks has a network of branches and in the largest banks the branch network extends



One of the newest buildings in the financial district of Montreal, Que., was built by the *Banque Canadienne Nationale*.

throughout the country. At the end of 1970, the banks operated a total of 6,200 branches in Canada. By the yardstick of total assets the two largest Canadian banks are among the eighteen largest in the world and the three largest Canadian banks are among the 27 largest in the world.

In addition to providing deposit accounts, the chartered banks offer their customers a wide variety of other services including facilities for investing in stocks and bonds, safekeeping for valuables, and loans for a variety of purposes and periods of time. Although bank loans are mainly for relatively short terms, the banks also make longer term mortgage loans for commercial and residential construction. To be able to meet unexpected withdrawals of deposits, the banks maintain reserves, mainly in the form of currency on hand and deposits with the Bank of Canada. The Bank of Canada performs the function of a banker for the chartered banks.

Many of the chartered banks are also active in international business and provide domestic banking services in a number of other countries, especially in the Caribbean area. The banks maintained 270 branches and agencies outside Canada at the end of 1970.

### **Non-Bank Financial Institutions**

In 1970, the assets of the banks accounted for some 60 per cent of the total assets of all Canadian financial intermediaries. Their main competitors are trust companies, mortgage loan companies, *caisses populaires*, credit unions, one Quebec savings bank, and sales finance and consumer loan companies. Investment dealers and stockbrokers also play an important part in the financial system.

While the chartered banks remain the most important financial institutions in Canada, the postwar period has witnessed a rapid growth and development of competing institutions. Those growing fastest in recent years have been the trust companies and the mortgage loan companies, of which there are approximately 110 operating over 400 branches across Canada. Both types of institutions accept deposits and have networks of branches. Although they compete with the banks to attract personal savings deposits, most of their funds are raised through the sale of fixed term debentures and investment certificates. A substantial portion of the assets of both trust and mortgage loan companies is held in the form of mortgages. Trust companies, in addition, administer private and corporate pension funds and the estates of individuals, manage companies in receivership, and act as financial agents for municipalities and corporations. Mortgage and trust companies may be licensed and supervised either by the federal Department of Insurance or by provincial authorities.

Another important type of financial intermediary among Canadians is the credit union or *caisse populaire* as it is called in Quebec. The *caisses populaires* began operations around 1900 and acted mainly as savings institutions for lower income groups. Later, some began lending to members at low cost, in addition to providing savings facilities. Unlike the chartered banks, most of which have been in operation since the turn of the century, virtually all of the credit unions and *caisses populaires* were founded during the past generation. Their growth has

been due in large measure to their co-operative foundation and to the local character of individual credit unions and *caisses populaires*—a striking contrast to the development of many other institutions.

### **The Bank of Canada**

The main function of the Bank of Canada is to regulate credit in the best interest of the economic life of the nation, so far as is possible by monetary action. The chartered banks have to maintain on a half monthly basis the equivalent of 12 per cent of demand deposits and 4 per cent of notice deposits in the form of Bank of Canada notes and deposits at the Bank of Canada. In addition to these cash or primary reserves, the banks are required to maintain secondary reserves consisting of excess cash reserves, treasury bills, and day-to-day loans. These assets are easily converted into cash in case the need arises. The Bank of Canada carries out its monetary policy function by varying the amount of reserves available to the chartered banks. Because of the relationship the banks' reserves bear to their total deposits, the Bank of Canada can induce the banks to expand or contract their assets in order to bring about the credit conditions that it considers appropriate. To affect the level of the chartered banks' reserves, the Bank of Canada acquires and disposes of a variety of financial assets.

The Bank also makes short-term advances to chartered banks or to banks operating under the Quebec Savings Bank Act as well as to the Government of Canada. The minimum rate at which the Bank is prepared to make advances is called the Bank Rate, and the Act requires that it be made public at all times. The Bank acts as fiscal agent for the government of Canada; it operates the government's deposit account through which flow virtually all government receipts and expenditures, handles debt management and foreign exchange transactions for the government, and acts as an adviser.

## **Insurance**

At the end of 1969, Canadians owned over \$112,000 million of life insurance. With an average of \$19,700 in force per household in 1969, Canadians are well insured compared to people in other countries.

The Canadian life insurance business consists of about 240 companies and fraternal benefit societies, over half of which are federally registered companies. The latter group of companies writes more than 90 per cent of the total business of the industry and holds assets in Canada of over \$14,000 million. In addition to life insurance, most of the companies sell policies to cover expenses resulting from illness and to compensate policyholders for wages not received during illness. Insurance may be purchased from a licensed insurance salesman or through a "group" plan at one's place of work.

In addition to those companies selling life insurance, about 350 companies sell insurance for fire, theft, automobile damages, and other casualties. The federally registered companies selling such insurance have assets in Canada of over 2,000 million dollars.



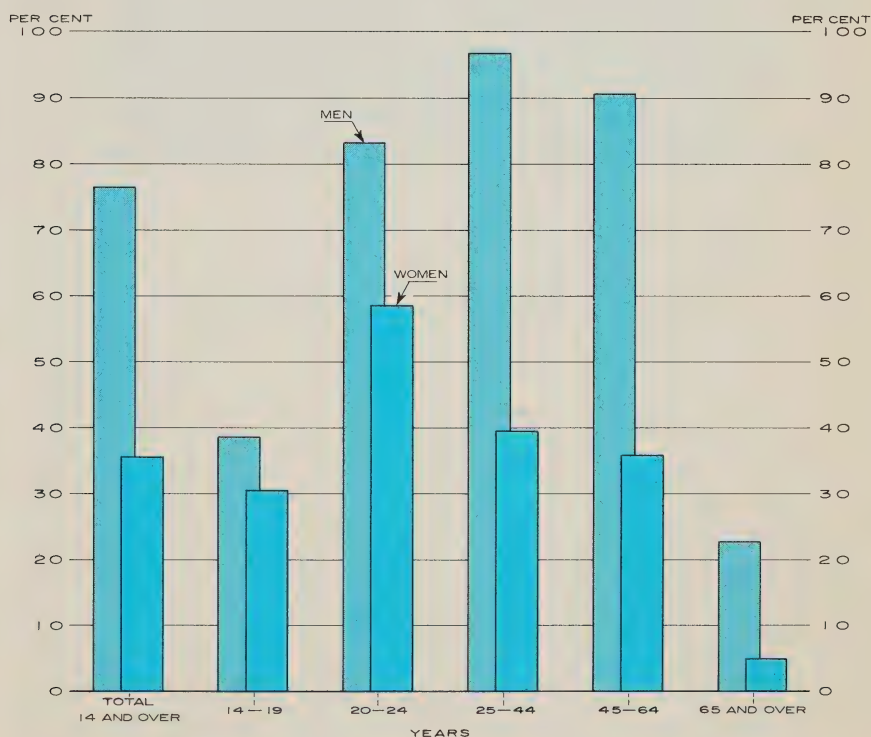
# Labour

## The Labour Force

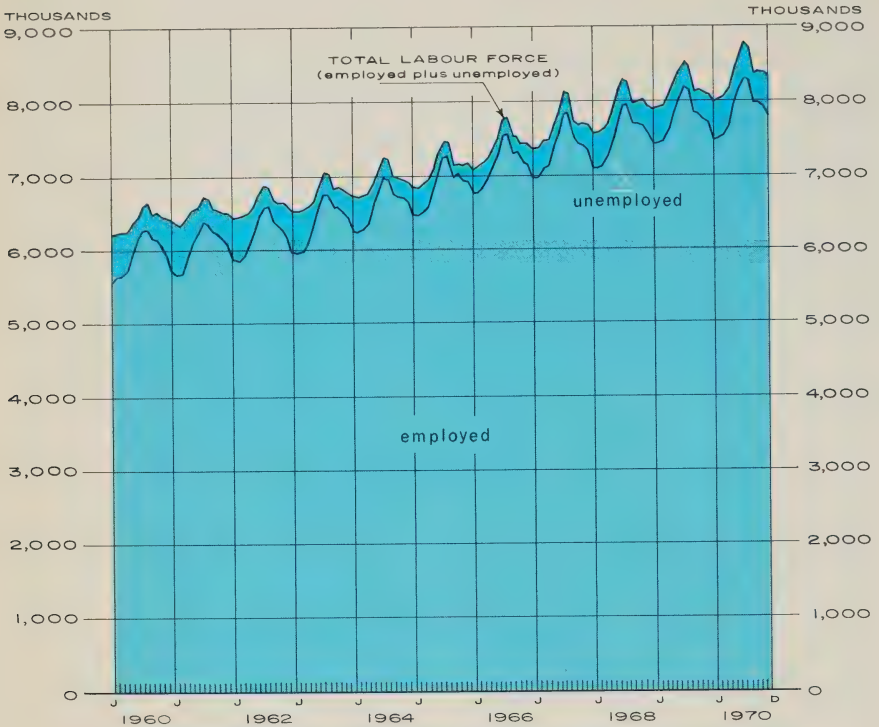
In 1970, 55.8 per cent of the Canadian population 14 years of age and over were members of the labour force, that is, either had jobs or were looking for jobs. There were 8,374,000 persons in the labour force and 15,016,000 in the population 14 years and older. Participation in the labour force varies a good deal for persons of different ages and sexes as is shown in the first chart.

The next chart shows changes in the labour force in recent years. Three main conclusions can be drawn from this chart. First, the size of the labour force has grown very rapidly in the 1960's, more quickly than in most other industrial nations. This is due both to a remarkable population growth and also to increases in the percentage of the population, especially women, who hold jobs. Second,

**Percentage of Population in the Labour Force, by Age and Sex.  
1970 Annual Averages**



# The Labour Force, Employed and Unemployed, 1960-70, by Months



## Average Weekly Wages and Salaries, Specified Industries, for Canada, Annual Averages, 1960, 1969, 1970

Industry	1960	1969	1970	Changes from	
				1960	1969
				to 1970	to 1970
	Dollars			Per cent	
Forestry .....	73.85	133.60	138.46	+87.5	+ 3.6
Mining, including milling .....	93.19	148.93	164.76	+76.8	+10.6
Manufacturing .....	78.88	122.93	132.72	+68.3	+ 8.0
Durables .....	85.17	132.13	142.88	+67.8	+ 8.1
Non-durables .....	73.73	114.14	123.21	+67.1	+ 7.9
Construction .....	86.90	150.68	166.38	+91.5	+10.4
Transportation, communications and other utilities .....	79.68	131.03	142.26	+78.5	+ 8.6
Trade .....	62.93	93.80	100.49	+59.7	+ 7.1
Finance, insurance and real estate .....	69.57	113.83	120.52	+73.2	+ 5.9
Service .....	54.86	84.23	90.65	+65.2	+ 7.6
Industrial composite .....	75.76	117.63	126.78	+67.3	+ 7.8

there are regular annual fluctuations in the size of the total labour force and in the amount of employment and unemployment. This happens because certain jobs in industries such as agriculture and construction that are affected by the climate are available only part of the year. As well, the school year has a strong influence on the labour force as younger persons join it each summer during the school vacations. The third main point is that the numbers of the unemployed in Canada fluctuate a great deal over time. In addition to the seasonal movements mentioned above, there are longer run cycles which are associated with general economic conditions. There were 495,000 persons unemployed in 1970, a year of high unemployment. This was 5.9 per cent of the labour force. In 1966, a low year in the current cycle of unemployment, the unemployment rate was 3.6 per cent.

The third chart gives one indication of the way in which the labour force is used in the Canadian economy. It shows how the 7,879,000 persons employed in 1970 were distributed among different industries.

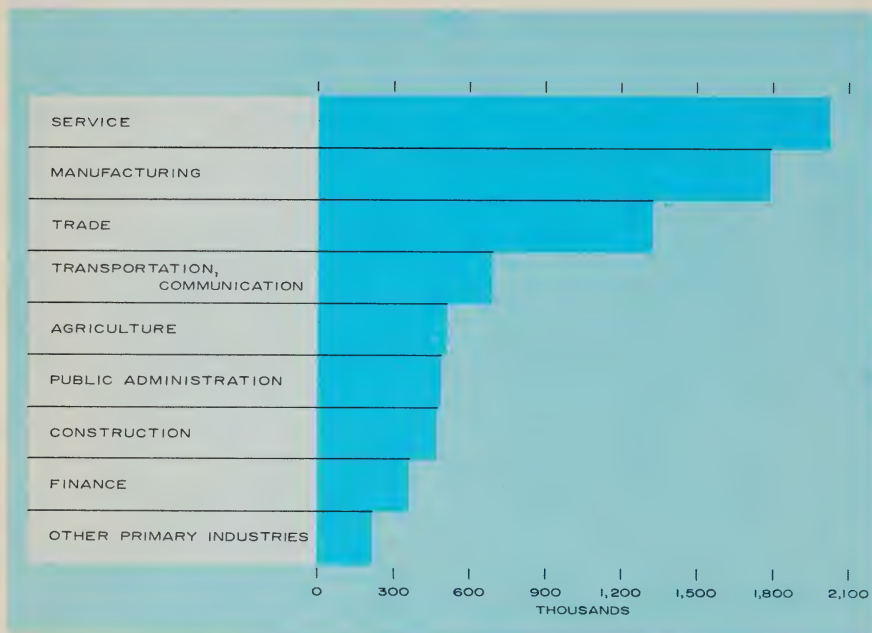
**Average Hourly Earnings and Average Weekly Hours for  
Hourly-rated Wage-Earners, Annual Averages, 1960, 1969, 1970**

Industry and Province	Average Hourly Earnings			Average Weekly Hours			Changes in A.H.E.		Changes in A.W.H.	
	1960	1969	1970	1960	1969	1970	1960 to 1970	1969 to 1970	1960 to 1970	1969 to 1970
	Dollars			Number			Per cent			
<b>Industry</b>										
Manufacturing .....	1.79	2.79	3.01	40.4	40.0	39.7	+ 68.2	+ 7.9	- 1.7	-0.8
Durables .....	1.95	3.00	3.26	40.7	40.6	40.2	+ 67.2	+ 8.7	- 1.2	-1.0
Non-durables .....	1.64	2.57	2.77	40.1	39.5	39.3	+ 68.9	+ 7.8	- 2.0	-0.5
Mining, including milling	2.09	3.28	3.71	41.6	41.4	41.0	+ 77.5	+13.1	- 1.4	-1.0
Construction .....	2.03	3.71	4.22	41.6	39.8	38.9	+107.9	+13.7	- 6.5	-2.3
Building .....	2.13	3.82	4.35	39.0	38.0	37.4	+104.2	+13.9	- 4.1	-1.6
Engineering .....	1.86	3.48	3.93	46.5	44.0	42.4	+111.3	+12.9	- 8.8	-3.6
Other industries:										
Urban transit .....	2.05	3.43	3.65	42.0	41.7	42.1	+ 78.0	+ 6.4	+ 0.2	+1.0
Highway and bridge maintenance .....	1.58	2.49	2.70	38.2	36.2	37.1	+ 70.9	+ 8.4	- 2.9	+2.5
Laundries, cleaners, and pressers .....	1.00	1.62	1.75	39.9	37.4	37.4	+ 75.0	+ 8.0	- 6.3	-
Hotels, restaurants, and taverns .....	1.02	1.62	1.74	39.1	32.2	31.9	+ 70.6	+ 7.4	-18.4	-0.9
<b>Province<sup>1</sup> - Manufacturing</b>										
Newfoundland .....	1.61	2.25	2.56	40.6	41.6	40.5	+ 59.0	+13.8	- 0.2	-2.6
Nova Scotia .....	1.55	2.20	2.45	40.9	39.8	39.1	+ 58.1	+11.4	- 4.4	-1.8
New Brunswick .....	1.52	2.29	2.48	41.6	40.3	40.5	+ 63.2	+ 8.3	- 2.6	+0.5
Quebec .....	1.60	2.50	2.68	41.2	40.8	40.4	+ 67.5	+ 7.2	- 1.9	-1.0
Ontario .....	1.88	2.93	3.19	40.3	40.1	39.8	+ 69.7	+ 8.9	- 1.2	-0.7
Manitoba .....	1.62	2.47	2.72	40.0	39.4	38.9	+ 67.9	+10.1	- 2.8	-1.3
Saskatchewan .....	1.91	2.94	3.16	38.9	39.7	39.5	+ 65.4	+ 7.5	+ 1.5	-0.5
Alberta .....	1.90	2.90	3.18	39.5	39.4	39.1	+ 67.4	+ 9.7	- 1.0	-0.8
British Columbia .....	2.18	3.48	3.71	37.5	37.4	36.8	+ 70.2	+ 6.6	- 1.9	-1.6

<sup>1</sup> Figures for P.E.I. not available.



### Employees by Industry, 1970, Annual Averages



### Earnings and Hours of Work

Statistics Canada obtains information on average weekly earnings, average weekly hours, and average hourly earnings from a monthly survey of some 52,000 commercial establishments in Canada having twenty or more employees in at least one month of the year. Such establishments represent slightly less than 60 per cent of the total employees in Canada.

From 1969 to 1970, average weekly hours declined in most industries. These declines ranged from 0.8 per cent in manufacturing to 2.3 per cent in construction. Urban transit and highway and bridge maintenance, however, showed increases of 1.0 per cent and 2.5 per cent respectively. All provinces registered lower average weekly hours except New Brunswick where a small increase occurred.

Average hourly earnings, in the same period, rose in all industries and provinces. The largest gain was recorded in construction (13.7 per cent), followed by mining, including milling (13.1 per cent). Among the provinces, Newfoundland experienced the largest increase (13.8 per cent) whereas British Columbia recorded the smallest gain (6.6 per cent).

Average weekly wages and salaries in all the industries surveyed rose 7.8 per cent in 1970, reaching the level \$126.78 from \$117.63 recorded in 1969. Increases ranged from 3.6 per cent in forestry to 10.6 per cent in mining, including milling. In manufacturing, average weekly wages and salaries increased by 8.0 per cent and construction showed a rise of 10.4 per cent.

## Manufacturing

Manufacturing is the largest of Canada's goods-producing industries and it therefore plays a dynamic role in the expansion of the nation's production, exports, and living standards. Almost one person in four earning a wage or salary in Canada receives it from an employer in the manufacturing industries. These industries account for roughly the same proportion of the gross domestic product at factor cost, that is, one quarter (according to 1969 preliminary data, \$17,040 million out of \$70,150 million). Advance data from monthly surveys indicated that 1,667,600 persons were employed in manufacturing and that the value of shipments of goods of own manufacture totalled \$45,303 million in 1970. (The shipments are much larger than the gross domestic product because the former incorporate materials produced in other industries or countries and also include inter-plant shipments within the manufacturing industries.)

A precise measure of exports of manufactures is not available, but if exports of fabricated materials and end products are accepted as roughly equivalent to manufactured products, Canadian manufacturers processed to some degree almost three quarters of the nation's exports in 1970. This proportion has been rising sharply in recent years, owing to the growth of exports of certain durable goods, particularly motor vehicles and parts manufacturers.

Manufacturing activity in Canada is highly mechanized and its factories thus use large amounts of capital equipment. This is partly because many types of natural resource processing are inherently capital intensive, that is, they employ a great deal of machinery, equipment, and buildings in proportion to labour. It is also because of the growing importance of industries producing highly manufactured goods like machinery and automobiles. In addition, high living standards, reflected in high wages, dictate economy in the use of workers and this often involves increased mechanization.

In 1970, according to a survey of investment intentions, it was anticipated that the manufacturing industries would be making more than one third of all capital expenditures by business and government for new machinery and equipment. These expenditures represent, of course, both the "widening" of capital, or the expansion of productive capacity, and the "deepening" of capital, or an increase in capital per employee or per unit of product.

Various factors have combined to produce a trend of rising productivity in industry. In fact, physical output in the manufacturing industries, per man-hour worked, increased at an average annual rate of 4.0 per cent over the 1946-69 period and at the same rate over the 1961-69 period. A temporary slackening of economic activity in 1970 made for a lower than average advance over 1969 of 1.3 per cent in output per man-hour worked. The total physical volume of manufacturing output declined in 1970 for the first time since 1958, notably because of less demand for motor vehicles and parts.

However, in 1970 motor vehicle manufacturers were none the less again the leading Canadian manufacturing industry in terms of value of shipments of goods of own manufacture, as indicated by a monthly survey. This industry replaced pulp and paper mills as the leading industry by shipments in 1965, lost this first posi-

tion to pulp and paper mills again in 1966, and then regained it in 1967, and has retained it since.

Owing to the weakening in the market for motor vehicles, the 1970 advance figures for the two industries were not far apart. Motor vehicle manufacturers' shipments were \$2,951 million, while those of the second industry, pulp and paper mills, were \$2,761 million. The third leading industry in the 1968 census of manufactures, slaughtering and meat processors, had shipments of \$1,909 million in 1970.

The annual census of manufactures is the most comprehensive, detailed set of figures on the manufacturing industries. While preliminary data have been published for 1969, the latest final results at the time of writing were for 1968; they are summarized in the accompanying table. In 1969 the remainder of the ten leading industries, in descending order of manufacturing shipments, were: petroleum refining, iron and steel mills, dairy factories, motor vehicle parts and accessories manufacturers, sawmills and planing mills, miscellaneous machinery and equipment manufacturers, and smelting and refining. (All but the last industry had shipments of \$1,000 million or more in 1969.)

**Proportional Distribution of Shipments of Manufacturers,  
Canada and Provinces, by First Destination, 1967**

LOCATION OF MANUFACTURING ESTABLISHMENT	SHIPMENTS WITHIN PROVINCE OF ORIGIN	SHIPMENTS TO OTHER PROVINCES AND TERRITORIES	SHIPMENTS TO OTHER COUNTRIES
CANADA	56%	28%	16%
NEWFOUNDLAND	38	2	60
PRINCE EDWARD ISLAND	43	51	6
NOVA SCOTIA	45	36	19
NEW BRUNSWICK	43	33	24
QUEBEC	54	31	15
ONTARIO	58	28	14
MANITOBA	57	38	5
SASKATCHEWAN	74	22	4
ALBERTA	58	33	9
BRITISH COLUMBIA	48	15	37



### Manufacturing Statistics, Selected Years, 1917 to 1970

Year	Employees	Salaries and Wages	Value Added by Manufacture	Value of Shipments of Goods of Own Manufacture <sup>1</sup>
	Number		Thousands of dollars	
1917 .....	606,523	497,802	1,281,132	2,820,811
1920 .....	598,893	717,494	1,621,273	3,706,545
1929 .....	666,531	777,291	1,755,387	3,883,446
1933 .....	468,658	436,248	919,671	1,954,076
1939 .....	658,114	737,811	1,531,052	3,474,784
1944 .....	1,222,882	2,029,621	4,015,776	9,073,693
1949 .....	1,171,207	2,591,891	5,330,566	12,479,593
1953 .....	1,327,451	3,957,018	7,993,069	17,785,417
1954 .....	1,267,966	3,896,688	7,902,124	17,554,528
1955 .....	1,298,461	4,142,410	8,753,450	19,513,934
1956 .....	1,353,020	4,570,692	9,605,425	21,636,749
1957 .....	1,340,948	4,778,040	..	21,452,343
1958 .....	1,272,686	4,758,614	9,454,954	21,434,815
1959 .....	1,287,810	5,030,132	10,154,277	22,830,836
1960 .....	1,275,476	5,150,503	10,380,148	23,279,804
1961 .....	1,352,605	5,701,651	10,434,832	23,438,956
1962 .....	1,389,516	6,096,174	11,429,644	25,790,087
1963 .....	1,425,440	6,495,289	12,272,734	28,014,888
1964 .....	1,491,257	7,080,939	13,535,991	30,856,099
1965 .....	1,570,298	7,822,919	14,927,753	33,889,425
1966 .....	1,646,024	8,695,890	16,351,740	37,303,455
1967 .....	1,652,827	9,254,190	17,005,696	38,955,389
1968 .....	1,642,352	9,905,504	18,332,204	42,061,555
1969 .....	1,673,319 <sup>2</sup>	10,831,306 <sup>3</sup>	20,131,436 <sup>4</sup>	45,932,907 <sup>5</sup>
1970 .....	1,667,600 <sup>2</sup>	11,566,000 <sup>3</sup>	19,782,000 <sup>4</sup>	45,303,500 <sup>5</sup>

<sup>1</sup> Before 1953, data represent gross value of production.

<sup>2</sup> Based on current data as published in *Estimates of Employees by Province and Industry* (DBS Bull. no. 72-008).

<sup>3</sup> Based on current data on earnings in manufacturing.

<sup>4</sup> Estimated on the basis of the ratio of "value added by manufacture" to "manufacturing gross output" in earlier years.

<sup>5</sup> Based on the monthly survey of shipments by manufacturers.

This mixture of primary manufacturing industries (processing natural resources) and secondary manufacturing industries (making more highly manufactured products) illustrates the diversification and high degree of development of Canada's manufacturing economy.

As noted, the leading industry in terms of manufacturing shipments is motor vehicle manufacturers. But the importance of the motor vehicle in Canadian manufacturing is actually much greater than indicated by this industry's figures. The combined manufacturing shipments of motor vehicle makers and makers of motor vehicle parts and accessories were \$4,160 million for 1970 according to advance estimates. In addition, motor vehicle parts are manufactured in lesser quantities in various other industries. Rubber tire and tube manufacturers and battery manufacturers also furnish important inputs to the manufacture of motor vehicles as well as serving large replacement markets.

### Manufacturing Statistics, by Province and Industry Group, 1968

Province or Territory and Group	Total Employees	Salaries and Wages	Value Added by Manufacture	Value of Shipments of Goods of Own Manufacture
	Number	Thousands of dollars		
<b>Province or Territory</b>				
Newfoundland .....	11,908	57,582	88,386	197,464
Prince Edward Island .....	2,255	8,219	16,569	51,657
Nova Scotia .....	32,894	148,811	261,044	663,335
New Brunswick .....	28,139	133,380	240,753	633,577
Quebec .....	521,250	2,923,728	5,215,464	11,742,911
Ontario .....	810,724	5,171,178	9,714,889	21,942,620
Manitoba .....	48,100	251,869	443,002	1,118,813
Saskatchewan .....	15,654	89,955	170,002	489,210
Alberta .....	49,759	292,983	604,529	1,667,034
British Columbia .....	121,490	826,671	1,575,436	3,550,399
Yukon Territory .....	86	438	834	1,194
Northwest Territories .....	93	689	1,296	3,341
<b>Canada .....</b>	<b>1,642,352</b>	<b>9,905,504</b>	<b>18,332,204</b>	<b>42,061,555</b>
<b>Industry Group</b>				
Food and beverage industries .....	226,470	1,211,043	2,636,728	7,674,300
Tobacco products industries .....	10,179	63,901	169,808	508,814
Rubber industries .....	24,833	154,959	303,283	565,339
Leather industries .....	31,741	131,879	201,918	396,242
Textile industries .....	73,234	364,097	652,453	1,526,824
Knitting mills .....	23,845	94,334	170,252	377,069
Clothing industries .....	97,596	378,694	600,133	1,258,268
Wood industries .....	90,309	490,721	896,061	1,966,340
Furniture and fixture industries .....	43,171	211,140	346,805	660,281
Paper and allied industries .....	117,959	836,084	1,479,229	3,422,015
Printing, publishing and allied industries .....	84,143	535,237	916,397	1,370,351
Primary metal industries .....	113,023	803,456	1,514,867	3,384,248
Metal fabricating industries (except machinery and transportation equipment industries) .....	137,559	864,199	1,493,521	2,899,875
Machinery industries (except electrical machinery) .....	76,350	520,131	737,399	1,480,375
Transportation equipment industries .....	149,379	1,102,226	2,045,552	5,597,442
Electrical products industry .....	124,215	747,909	1,173,800	2,407,472
Non-metallic mineral products industries .....	51,670	326,042	686,041	1,204,177
Petroleum and coal products industries .....	15,631	138,470	329,417	1,675,999
Chemical and chemical products industries .....	77,027	537,992	1,285,018	2,428,595
Miscellaneous manufacturing industries .....	74,018	392,990	693,522	1,257,529

Domestic exports of passenger automobiles exceeded \$1,700 million in 1970 and those of all motor vehicles and parts reached \$3,570 million, showing the impact of the Canada-United States Agreement on Automotive Products.

A survey of markets served by the Canadian manufacturing industries in 1967 showed that 56 per cent of their shipments of goods of own manufacture had a first destination in the same province as the originating manufacturing establishment.

About two dollars in seven, or 28 per cent of the total value, went to other first destinations in Canada and one dollar in six, or 16 per cent, went direct to first destinations in other countries. It is known, however, that this latter figure considerably understates the importance of export markets to Canadian manufacturers as certain industries' products reach other countries through middlemen in important quantities and other industries export goods after transferring them to the books of company units not identified as manufacturing establishments.

Most statistics in this section are on an establishment basis; they relate to units roughly equivalent to factories or plants. When whole corporations are classified by industry according to their principal activity, those principally engaged in manufacturing had a net profit before income tax of 6.8 per cent of total revenues in 1969. This compares with an average of 7.4 per cent for the 1962-69 period.

Freshly caught fish are immediately processed for distribution in Canada and abroad.





## Domestic Trade

The channels of distribution may be defined as the means by which goods are moved from the producer and from secondary sources (for example, importers), to the final consumer. The principal channels of distribution are wholesalers (including agents and distributors), manufacturers' sales branches, retail outlets, vending machines, and direct selling activities such as mail order and door-to-door selling. In addition there are avenues for the performance of services to both the consumer and industry, including accommodation, meals, recreational and amusement facilities, laundry and other personal service facilities, equipment rental, management, research, advertising consulting, and data processing facilities.

The nature and activities of the channels of distribution are characterized by continuous change. In retailing and services, franchising operations appear to be multiplying. Planned shopping centres have sprung up in the suburbs of cities. In the central business district, merchants are participating in newly constructed shopping malls and multi-store, multi-level building developments which house retail and service outlets. Independent store owners are forming voluntary groups that engage in joint advertising and centralized purchasing in order to compete more effectively with corporate retail chains. They had been joining existing groups in increasing numbers up to 1968, but the rate of growth appears to have slowed down in 1969. The gasoline industry engages in the direct selling and

Enormous supermarkets are found throughout Canada, especially in urban regions.



retailing of appliances and household and sporting goods. Businesses are making extensive use of specialized agencies, many types of which have come into existence only in recent years, such as data processing services, operations research and market research agencies, public relations firms, mailing list houses, and marketing and management consultants.

### Retail Trade by Province and Kind of Business, 1968-70

Province or Territory and Kind of Business	1968	1969 <sup>1</sup>	1970 <sup>1</sup>	Percentage Change 1969-70
Millions of dollars				
<b>Province</b>				
Newfoundland .....	464.2	470.4	488.2	+ 3.8
Prince Edward Island .....	121.7	125.7	134.0	+ 6.6
Nova Scotia .....	862.3	893.3	933.5	+ 4.5
New Brunswick .....	687.2	704.3	736.6	+ 4.6
Quebec .....	6,564.9	6,937.8	7,090.8	+ 2.2
Ontario .....	9,884.7	10,639.2	10,841.6	+ 1.9
Manitoba .....	1,118.0	1,159.2	1,181.6	+ 1.9
Saskatchewan .....	1,081.6	1,054.7	1,016.4	- 3.6
Alberta .....	2,066.9	2,234.7	2,227.4	- 0.4
British Columbia, Yukon and Northwest Territories .....	2,859.3	3,105.3	3,143.1	+ 1.2
<b>Total</b> .....	<b>25,710.8</b>	<b>27,324.7</b>	<b>27,793.2</b>	<b>+ 1.7</b>
<b>Kind of Business</b>				
Grocery and combination stores .....	5,985.6	6,422.8	6,873.9	+ 7.0
All other food stores .....	580.7	626.8	635.0	+ 1.3
Department stores <sup>2</sup> .....	2,444.8	2,723.2	2,841.5	+ 4.3
General merchandise stores <sup>3</sup> .....	727.9	807.9	802.4	- 0.7
General stores .....	572.0	601.1	630.1	+ 4.8
Variety stores .....	513.1	541.8	550.2	+ 1.6
New motor vehicle dealers <sup>4</sup> .....	4,714.1	4,808.3	4,229.4	-12.0
Service stations and garages .....	2,179.8	2,300.4	2,461.6	+ 7.0
Men's clothing stores .....	398.3	421.4	437.5	+ 3.8
Women's clothing stores .....	501.8	536.6	540.0	+ 0.6
Family clothing stores .....	381.4	389.0	392.3	+ 0.8
Shoe stores .....	306.5	313.7	322.1	+ 2.7
Hardware stores .....	392.4	402.2	409.6	+ 1.8
Furniture, T.V., radio and appliance stores .....	816.1	863.3	840.6	- 2.6
Fuel dealers .....	471.4	485.5	516.0	+ 6.3
Drug stores .....	736.6	784.1	819.6	+ 4.5
Jewellery stores .....	213.7	222.6	226.3	+ 1.7
All other stores <sup>5</sup> .....	3,774.5	4,074.1	4,265.2	+ 4.7

<sup>1</sup> Preliminary; subject to revision. Excludes adjustments for "births" and others.

<sup>2</sup> Since 1966 included are: concessions operating in department stores. Excluded are: non-department store outlets of department stores; department store mail-order catalogue sales. The new definition of department stores has affected the data of several other categories of retail trade which cannot be compared with pre-1966 data.

<sup>3</sup> Includes stores which are not full-line department stores, plus department store mail-order catalogue sales.

<sup>4</sup> Includes sales of both new and used vehicles, service and repair receipts. Excludes data of used car dealers.

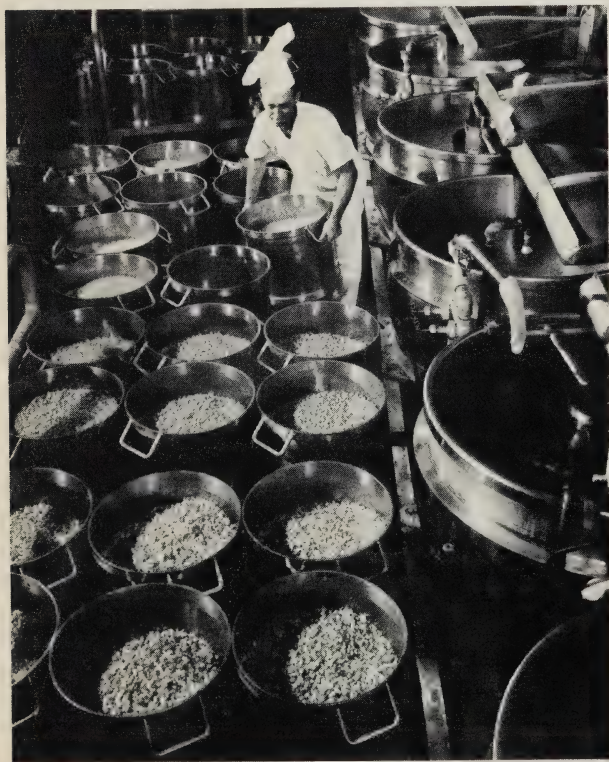
<sup>5</sup> The chief component is alcoholic beverage stores, but also includes used-car dealers and many others.

The changing nature of business often renders the unequivocal classification of outlets — which is necessary for statistical analysis — difficult. For example, a clear distinction could no longer be made between department stores, discount department stores, and variety stores. This resulted in the adoption, by Statistics Canada, of a new definition of department stores, which became effective in 1966. While these definitional changes reflect the changing pattern of the retail market, comparisons of data with those of earlier years are made more difficult. Some details are given in the preceding table.

### Retail Trade

From 1966 to 1970 retail sales in Canada rose by 22.5 per cent to a total of \$27,793.2 million. In Ontario, Alberta, and British Columbia retail sales increased at an above-average rate, while the increases in all other provinces were below the national average. In Saskatchewan retail sales actually declined.

The largest increase in retail trade was recorded by department stores (+44 per cent). It is noteworthy that the important motor vehicle dealer category, which had had a below-average growth from 1966 to 1969, showed a serious drop in 1970, so that the 1970 total is below that of 1966 by 2.5 per cent.



Almost every tin of Campbell soup sold from the Lakehead to Vancouver Island is processed at this plant in Portage la Prairie, Man.



A relatively new type of shop is the boutique, where fashions appealing to young people are sold.



There has been a substantial increase in the activities of shopping centres. In 1961 about 5.5 per cent of all retail sales in Canada were made in shopping centres. By 1968 this share had more than doubled, to 11.2 per cent. In that year, there were 480 shopping centres in Canada, incorporating 6,634 retail stores with sales of \$2,873.2 million (excluding receipts through 2,211 service outlets which added another \$126.3 million to shopping centre receipts).

In 1970, of all retail sales in Canada, \$10,576.6 million was through chains, (38.1 per cent) and \$17,216.6 million through independent stores (61.9 per cent). In 1964, chains had 31.7 per cent and independents 68.3 per cent of the total retail market.

As has been mentioned earlier, in an effort to compete more effectively with corporate chain stores, independent retailers in certain trades have affiliated in voluntary organizations to take advantage of management services, bulk buying, and improved advertising at lower cost. The three trades in which voluntary groups were able to form most readily were grocery and combination stores, drug stores, and hardware stores. Although in these trades the voluntary groups failed to halt the growth of the chain stores' share of the market, they probably succeeded in slowing the progress of the chains in recent years.



The Sparks Street Mall in Ottawa, Ont., has been a great success. Traffic has been excluded and shoppers can stroll through fine urban landscaping.

## Direct Selling

Not included in the retail trade data are "direct sales," that is, door-to-door, mail-order, and other sales to private consumers not made through a store (though department store mail-order catalogue sales are included with retail trade). In 1969 direct sales amounted to \$712.1 million, an increase of 2.1 per cent over 1968, supplementing the 1969 retail sales of \$27,324.7 million. Also excluded are sales through merchandise vending machines which reached \$142.9 million in 1969, an increase of 12.5 per cent over 1968.

The principal components of direct sales in 1969 were dairy products (\$168 million); newspapers and magazines (\$128.4 million); cosmetics and pharmaceuticals (\$73.8 million); books and record albums (\$72.2 million); bakery products (\$51.3 million); electrical appliances (\$49.8 million); kitchenware, kitchen utensils, and household cleaning utensils, cleaners, and soaps (\$47.2 million). Dairy and bakery products, and phonograph records were noted among the lines whose direct sales remained static or declined.

## Service Trades

Changes within the service sector can best be measured and analyzed through census results, since intercensal surveys provide only partial coverage of this large



and diverse field. From 1961 to 1966, the service trades developed at a faster rate than either personal disposable income or personal consumer expenditure. The 53.9 per cent increase in the service trades was also greater than the 41.2 per cent growth in retail sales during the same period.

In 1966, receipts by service trades amounted to \$4,587 million, of which the hotel, tourist camp, and restaurant group accounted for \$2,397 million, the personal services group for \$596 million, the amusement and recreation group for \$442 million and the business services group for \$492 million.

### Consumer Credit

Consumer credit refers to advances made for personal, non-commercial purposes, either in the form of cash, or as credit against specific purchases of consumer goods under contractual sales agreements. Excluded from this term are residential mortgages, home improvement loans, fully secured bank loans, fees owed to professionals such as doctors and lawyers, loans from stockbrokers and investment dealers, credit extended for services such as public utilities, hotels and travel, and interpersonal loans.

Automobile parts are assembled at a die-casting plant in southern Ontario.





Consumer credit expanded continuously throughout the sixties at an annual rate approaching 12 per cent. At the end of 1970, outstanding balances amounted to \$11,400 million—a 5.1 per cent increase over 1969 and the lowest increase in over a decade. The share of total consumer credit extended by retailers and other sales financing institutions has diminished over the years (from 43.4 per cent in 1961 to 23.9 per cent in 1970), while that of banks and other cash lending institutions increased correspondingly.

### Consumer Credit: Balances Outstanding, 1961-70, by Selected Holders

Year	Total	Retail Dealers <sup>1</sup>	Other Sales Financing <sup>2</sup>	Cash Loans Banks <sup>3</sup>	Other Cash Loans <sup>4</sup>
Millions of dollars					
1961 .....	4,250	1,005	838	1,039	1,368
1962 .....	4,694	1,039	902	1,196	1,557
1963 .....	5,270	1,088	982	1,446	1,754
1964 .....	6,056	1,147	1,148	1,808	1,953
1965 .....	6,943	1,216	1,270	2,257	2,200
1966 .....	7,556	1,260	1,346	2,474	2,476
1967 .....	8,372	1,286	1,287	2,994	2,805
1968 .....	9,584	1,329	1,352	3,686	3,217
1969 .....	10,846r	1,415	1,524r	4,171	3,736r
1970 .....	11,400p	1,421p	1,309p	4,685	3,985p

<sup>1</sup>Includes both charge accounts and instalment credit of department stores, furniture and appliance stores, etc.

<sup>2</sup>Includes instalment sales credit extended by sales finance and consumer loan companies and oil companies' credit cards.

<sup>3</sup>Personal cash loans (other than those fully secured and home improvement loans) extended by chartered banks and Quebec savings banks.

<sup>4</sup>Includes personal cash loans extended by consumer loan companies, credit unions and Caisses populaires and policy loans of life insurance companies.

p Preliminary data

r Revised.

### Wholesale Trade

For statistical purposes, wholesalers are classified into five types: wholesale merchants, (which accounted for 56 per cent of total wholesale sales of \$19,740 million in 1961), agents and distributors, manufacturers' sales branches, assemblers of primary products, and petroleum bulk stations.

Wholesale merchants alone showed an 18.3 per cent increase in sales between 1966 and 1970 to an estimated \$18,393.7 million, and a 66.5 per cent increase since 1961.

Consumer goods trades in 1970 totalled \$8,880 million, recording a 27.7 per cent increase since 1966, and industrial goods trades amounted to \$9,514 million, which represents an increase of 10.7 per cent during that period. Two notable decreases in sales by wholesale merchants were recorded in 1970 over 1966: coal and coke sales declined in dollar volume by 15.5 per cent and farm machinery by 43.6 per cent. The most important kinds of business were groceries and food specialties (\$3,006 million), construction materials and lumber (\$2,148 million), and industrial and transportation equipment and supplies (\$1,731 million).

## Co-operatives

The co-operative movement is represented in all ten provinces of Canada. It was most readily adopted in the rural areas of the country where there were no marketing facilities for farm produce or where farmers were dissatisfied with the prevailing marketing practices. Because of this, the movement remains predominantly agricultural. It is only in the past decade that significant progress has been made in the urban sector with the establishment of co-operative supermarkets and shopping centres. Most co-operatives are incorporated under provincial legislation; a number of the larger ones whose activities span provincial boundaries are incorporated under the Canada Corporations Act or special federal acts. However with passage of the Canada Co-operative Associations Act in December 1970 co-operatives operating on an inter-provincial basis are now able to incorporate under a federal act which provides for the particular character and structure of the co-operative form of enterprise. Co-operative business organizations are generally classified into three types: marketing (e.g., dairy co-operatives, which receive milk from their farmer-members and sell it for them); purchasing (e.g., grocery co-operatives, which purchase food supplies and sell them to their members); and service (e.g., transportation co-operatives, which truck their members' produce to market for a fee). Some of the marketing and purchasing co-operatives also engage in manufacturing. In addition to the regular or local co-operatives (those directly owned by the members), there were eight co-operative wholesales in 1969 (seven in 1970, due to amalgamation). These wholesales serve as distributors and central marketing agencies for the locals.

Gross business volume of 2,400 local co-operatives with 1.7 million members came to \$2,010 million in 1969. Assets at year-end were \$1,250 million. Business volume consisted of marketings of farm produce (\$1,283 million); sale of merchandise and supplies (\$727 million); service revenue (\$66 million); and miscellaneous income (\$16 million). Grains and seeds (\$501 million); dairy products (\$378 million); and livestock and products (\$243 million) accounted for the bulk of farm product marketings. Food products, feed, and petroleum were the leading supply categories at \$224 million, \$147 million, and \$112 million respectively. Saskatchewan was again the leading marketing province thanks to its large sales of grain and livestock, while Quebec was the leading province in supplying co-operative members with feed and food products.

The eight co-operative wholesales in 1969 achieved total sales of \$591 million consisting of sales of supplies of \$368 million and marketings of \$223 million. The wholesales distribute and market a wide variety of merchandise and farm products of which food products (\$115 million); livestock marketings (\$95 million); feed (\$78 million); and petroleum (\$66 million) are the most prominent.

Two important national co-operative bodies work together to improve co-operative organization, education, and promotion. The Co-operative Union of Canada concentrates its efforts in English-speaking areas while the *Conseil canadien de la coopération* serves co-operatives in French-speaking areas.

A number of Canadian universities offer courses on co-operatives and some conduct extension work in this field. The most prominent is St. Francis Xavier University in Nova Scotia which, since the early 1930's, has carried on extension



The co-operative movement in Canada had its beginning as an agent selling western farmers' wheat.

work in the Maritime Provinces to organize and assist co-operatives. In more recent years, university courses have been instituted, both short-term for co-operative management and personnel, and as a regular part of the university curriculum. The Coady International Institute was established at St. Francis Xavier University in 1960 and has been providing instruction in co-operative principles and organization to non-Canadian students, mainly from developing countries where the self-help nature of co-operative organizations has been found to be most appropriate.

Western Co-operative College in Saskatchewan provides short courses for co-operative personnel as well as training courses for foreign students. The *Institut coopératif Desjardins* in Quebec specializes in social leadership and adult education for Quebec residents engaged in co-operatives and for foreign students.

### The Consumer Price Index

During 1970, there was a marked slowing down in the rate at which consumer prices had been advancing in recent years. By the end of the year, the index was only 1.5 per cent above its level of December 1969. For the year as a whole, the index — established at 100 in 1961 — averaged 129.7 which was 3.4 per cent above the annual average index of 1969.



**Percentage Increases in the Annual Average Indexes  
for All Items and Major Components**

	1965	1966	1967	1968	1969	5-Year	1970
	1964	1965	1966	1967	1968	Average	1969
All Items .....	2.5	3.7	3.6	4.1	4.5	3.7	3.4
Food .....	2.6	6.4	1.3	3.3	4.2	3.6	2.3
Housing <sup>1</sup> .....	1.8	2.7	4.3	4.6	5.1	3.7	4.9
Clothing .....	1.8	3.8	5.0	3.0	2.8	3.3	1.8
Transportation .....	3.8	2.4	4.2	2.6	4.6	3.5	4.0
Health and Personal Care .....	4.6	3.1	5.2	4.0	4.9	4.4	4.4
Recreation and Reading .....	1.6	2.8	5.1	4.9	5.9	4.1	3.5
Tobacco and Alcohol .....	1.6	2.4	2.6	9.0	3.8	3.9	1.2

<sup>1</sup>Includes shelter and household operation.

The below-average increase in the important food component was the major cause of the lower than average increase in the consumer price index over the year, although the small increases recorded for the clothing and the tobacco and alcohol indexes were also significant. On the other hand, the housing component, which accounts for close to one third of the index, advanced 4.9 per cent between 1969 and 1970, an increase not too different from that between 1968 and 1969, and considerably larger than the average increase for the preceding five years.

Consumer price movements classified by commodities and services offer another view of the incidence of change in prices. Between 1969 and 1970 the commodities index rose 2.2 per cent, less than the average rise of 3.0 per cent a year for the preceding five years. Non-durable commodity prices rose 2.3 per cent between 1969 and 1970, again a lower rise than the 3.9 per cent average for the preceding five years. Durable commodity prices rose 1.2 per cent in the latest year, which was close to the five-year average of 1.3 per cent. In contrast to commodities, the services index maintained its rate of rise, moving up 4.8 per cent between 1969 and 1970, in line with the average increase for the preceding five years of 4.7 per cent. The purchasing power of the consumer dollar dropped from 80 cents in 1969 to 77 cents in 1970, relative to \$1.00 in 1961.



## Transportation

Transportation in Canada has developed along lines best suited to meet the economic and political realities of this large country, with its dispersed centres of population and outlying settlements. It has established the necessary links between the various economic regions, tying the country together and establishing closer contacts among its people.

Passenger traffic as measured by passenger miles has more than tripled in the past quarter-century with the automobile the predominant mode of transportation. In 1970, cars continued to account for nearly 88 per cent of the total passenger miles, followed by air (6 per cent), rail (3 per cent), and bus and other urban public transport (3 per cent). Commercial air services have shown the only significant shift in the distribution of passenger traffic by doubling since 1958.

The growth of freight transportation has also been dramatic. Measured in ton-miles, freight transportation has increased from 88,340 million in 1945 to 277,030 million in 1969. The changing pattern of traffic is attributable to such factors as technological changes in transportation, dispersion of economic activity and population centres, and the demands of new industrial developers for transportation services.

Multiple-lane highways have been built to accommodate the ever-increasing numbers of automobiles on the roads.







When automobiles are immobilized by snow, snowmobiles can forge a path through the downfall.

In absolute terms, railway freight transportation as measured in ton-miles increased from 65,450 million in 1960 to 96,460 million in 1969. During the same period, water ton-miles increased from 56,900 million in 1960 to 75,780 million in 1969. Notwithstanding the ability of these two modes to carry large volumes of traffic at low cost, their share of the total transportation market has steadily decreased from 74.2 per cent at the beginning of the decade to 62.2 per cent at the end of the decade.

Pipelines for natural gas, petroleum, and petroleum products are now major elements in Canada's transportation network. The output of this industry has increased from 26,850 million ton-miles in 1960 to 80,010 million ton-miles in 1969. The share of the market has risen in the decade from 16.3 to 28.9 per cent.

The trucking industry has steadily increased in importance since the early 1950's. By 1969 the total ton-miles performed by the trucking industry was 15,770 million, triple the 5,190 million ton-miles in 1949. The trucking industry carries over 50 per cent of the total tonnage in Canada. The increased demand for truckers' services may be attributed to the fast, efficient door-to-door service they offer.

Air cargo has increased by approximately 1,700 per cent in the last twenty years,





At the port of Quebec City facilities include a floating crane with the capacity to move loads weighing up to 80 tons.

although it represents only 1 per cent of total transportation. This increase has resulted from the advantages—mainly speed, the reduction of inventories and warehousing, as well as more personalized services—of air transport over other carriers.

### **Recent Developments**

In the past decade, transportation has undergone a number of technological changes and major modifications to traditional services in order to meet the special needs of industry and to provide faster and more efficient handling of goods. One of the far-reaching innovations in transportation is the multi-purpose, intermodal container. The containerized cargo revolution means faster, more efficient service at a reduced cost. The main driving force behind this revolution is rapidly increasing trade. To take full advantage of containers, the co-operation of all parties participating in transportation has to be ensured. Containerization, however, requires large amounts of capital investment and specialized vehicles, new containers, road-and rail-handling equipment, and in many cases, completely new seaports. The large railways and shipping companies are investing great amounts in new cars, handling equipment, and container ships. Many vessels are being adapted to carry containers and many specially designed ships are being built to carry containers of different sizes. These ships are reducing turnover time

and by reducing the possibility of loss and damage they will improve the economics of transportation.

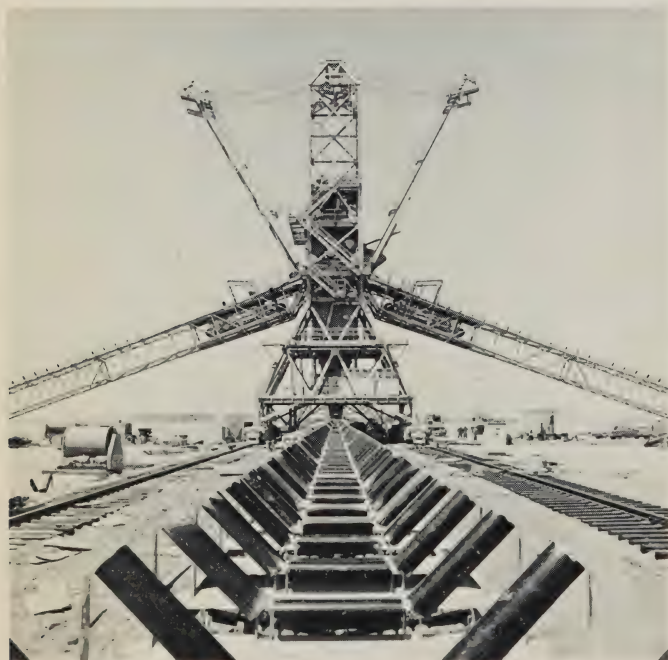
Another important development in the shipping industry is the advent of the super-tanker. Such ships are enormous: one 1109-ft. long vessel has a breadth of 170 ft., a deadweight of 250,000 tons, a capacity of two million barrels of crude oil, with a service speed of about 15.5 knots. Super-tankers of such size pose a potential ecological danger to the oceans. Further developments in the shipping field are: (1) the laser beam to guide the vessel on a straight line, (2) the Alexbow hammerhead ice-breaking bow and (3) the ore-slurry-oil ship to carry coal from Vancouver to Japan.

In rail transport a major innovation has been the development of specially built unit trains, whose cars are permanently coupled. In addition, these trains are equipped with a radio command system that operates locomotives by remote control. The railways have introduced the unit trains to export western coal to Japan and eastern Canada. The unit train system provides inexpensive transportation and ensures the long-term economic development of western Canada's rich coal resources.

At the present time, feasibility studies are being conducted to investigate the possible use of unit trains to move grain more cheaply. According to this system, grain would be handled like a bulk commodity, with specially built unit trains shuttling back and forth from a small number of huge elevators strategically located in major producing areas. The railways are implementing a fully automatic

The harbour at Point Tupper, N.S., with a water depth of 100 feet, will be able to accommodate the massive 326,000-ton crude oil tankers in service for Gulf Oil. The refinery on shore will provide 60,000 barrels of oil a day for East Coast markets.







“instant car location service” which enables the customer to check by means of the company’s computers precisely and quickly where any of the freight cars that might be carrying his goods are located. In addition, the railways are building computer-controlled freight classification yards, such as CP Rail’s Alyth Freight Yard in Calgary completed in 1971.

For air service in the 1970’s, supersonic, jumbo, short take-off and landing (STOL), and vertical take-off and landing (VTOL) aircraft are planned. The future of the supersonic plane is, however, in doubt, owing to its excessive noise level and to other factors affecting the environment. Jumbo planes may carry up to 500 passengers. In order to accommodate the huge jumbo planes and the increased traffic, a new airport is being built north of Montreal and another airport is in the advanced planning stage at Toronto. The STOL/VTOL aircraft will require limited airfield space and could land much closer to ultimate destinations than standard aircraft, eliminating the need for long trips to or from airports.

Bus companies are now going into the small-package freight business on an increasing scale. Bus parcel terminals are being built in Toronto, Edmonton, Halifax, and Vancouver. The intercity bus industry is preparing to make a more significant contribution to this business for which rail transport and trucking transport are not particularly well suited.

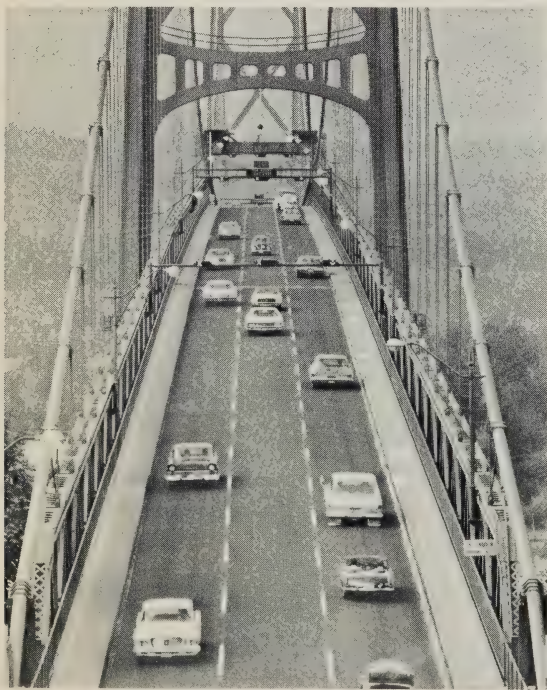
Radio-controlled unit trains carry coal from Alberta and British Columbia for shipment to Japan from the recently completed Roberts Bank south of Vancouver, B.C.



In trucking, the intercity motor carriers of freight have been attempting for some time to increase their ability to carry larger payloads. Early in 1970, the operation of "triples" was tested between Calgary and Edmonton. "Triples" consisted of a tractor and a single-axle semi-trailer, followed by two trailers with similar axle configurations. The experiment was closely monitored and after the period of testing the Alberta Government authorized the operation of triples between Calgary and Edmonton, subject to restrictions relating to weather and week-end travel. Other provinces have permitted or are in the process of permitting changes to regulations governing gross vehicle weights on provincial highways.

Road transport was not without its problems in 1970. Public awareness of the amount of pollution and the level of noise has brought about legislation to combat these ills. The amount of congestion in major metropolitan centres at peak periods continued to plague these municipalities. In a public-spirited move a noise-abatement campaign was launched by the Trucking Association of Alberta in 1969. Pollution in the Canadian environment focused attention on the road transport complex and brought changes in the operation of automobiles, buses, and trucks. Anti-pollution devices are being developed and the Ministry of Transport has issued safety standards for motor vehicles to contribute to automotive safety and to preserve the quality of Canadian life for present and future generations.

While the changes during the past decade in the traditional commercial transport of passengers and goods by road, rail, water, and air have been dynamic, the



The Lions Gate bridge links North Shore commuters with the city of Vancouver.





Toronto, Ont., has a subway system that is both underground and above ground.

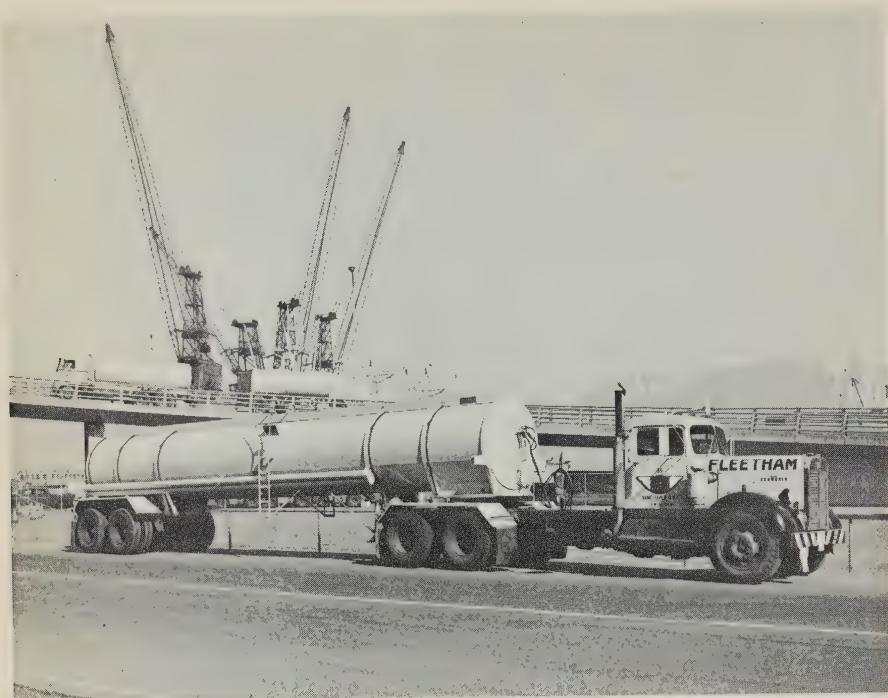
development of new or modified types of vehicles for transport and recreation has altered the patterns of life for many Canadians. Air cushioned vehicles such as hovercraft provide possibilities previously unknown. The tremendous increase in snowmobiles and motor cycles in the past few years reflects their appeal as recreational vehicles. This increase also brings many new problems that require legislative regulation and research on safety.

### Road Transport

Canada had 517,305 miles of roads and streets by the end of 1969, of which 468,619 were highway and rural road mileage, while 48,686 were urban street mileage. Expenditures on maintenance and construction of Canada's highways and streets during the 1969-70 fiscal year amounted to \$1,957,057,000.

In 1969 there were 8,254,000 motor vehicles registered in Canada: 6,433,000 were cars, 1,422,000 trucks and road tractors, 40,000 buses, 138,000 motor cycles, and 221,000 other motor vehicles such as farm tractors licensed in accordance with the regulations of the provinces and territories. At the end of September





Giant tanker trucks carry such loads as oil and chemicals.

1970, motor vehicle registrations were up 3.4 per cent over the same date in the previous year.

Although most passengers in urban areas travel in automobiles, urban transit systems are of great importance in the movement of large numbers of Canadians. In 1970 sixty-two class I urban transit systems (those grossing more than \$100,000 annually) reported \$235 million in revenues (a slight increase over 1969), over a thousand million passenger fares (a decrease of 2 per cent over the previous year), and 251 million revenue vehicle-miles (the same level as the previous year).

In 1970 intercity buses carried 47,568,000 revenue passengers, approximately the same number as in the previous year. Slight increases in revenues to \$82,700,000 from \$79,200,000 and in vehicle miles to 123,370,000 from 120,700,000 were reported.

Revenues of intercity motor carriers of freight and household goods increased by an average of 8 per cent from 1968 to 1969. However, increased operating costs coupled with the economic slowdown of 1969-70 had a marked effect on the industry, which became especially pronounced during the first three quarters of 1970.

## Railways

Once again the pioneer role that the railways played in the early development of Canada is repeated today in the Canadian North. The Canadian National line to Hay River and the Pine Point lead-zinc mines gave the Northwest Territories its first railway service in 1964. Canadian National also operates into remote parts of northern British Columbia and northern Quebec and provides the Prairies with a rail link to Hudson Bay at Churchill, Man. The new Alberta Resources Railway, in the foothills of the Rockies north of Jasper is operated by Canadian National for the government of that province.

The provincially owned Pacific Great Eastern Railway serves the interior of British Columbia from Vancouver north to Fort St. John and beyond. An extension is scheduled to reach Fort Nelson, not far from the border with the Northwest Territories, by September of 1971. The Northern Alberta Railways which is jointly owned by Canadian National and Canadian Pacific serves the area north of Edmonton with a 900-mile system.

The completion of a transcontinental railway in the 19th century was a necessary condition for British Columbia's joining Canada. The two major railways pass through spectacular mountain scenery.







Train yards such as this in Montreal are increasingly computerized.



Ships pass to and fro in the harbour of St. John's, Nfld.



Northern Ontario is served by the provincially owned Ontario Northland Railway with a 600-mile system stretching from North Bay to Moosonee and by the privately owned Algoma Central Railway which operates over 300 miles of line between Sault Ste Marie and Hearst. The Quebec North Shore and Labrador is another example of a railway that is helping to open up the Canadian North. Its construction in the mid-1950's made feasible the development of huge iron ore deposits in northern Quebec and Labrador.

Finally, one railway has furnished a vital link for the Canadian North since the turn of the century. It is the White Pass and Yukon which provides the Yukon with an outlet to the Pacific at Skagway, Alaska. At the present time the railway industry in Canada is dominated by two of the largest railways in the world, namely the government owned Canadian National and the privately owned Canadian Pacific. These two companies are also prominent in other transportation fields including the operation of airlines, trucking firms, and ocean and coastal steamships as well as hotels, communications, and other enterprises.

Of the \$1,584 million total railway revenue reported by the 34 common carrier railways operating in Canada in 1969, Canadian National accounted for 52.2 per cent, Canadian Pacific 36.7 per cent, Quebec North Shore and Labrador 2.4 per cent, Pacific Great Eastern 1.8 per cent, Ontario Northland 1.1 per cent, and the Chesapeake and Ohio 1.0 per cent. The remaining 4.8 per cent is split between some 28 railways, several of them branches of American railways which only operate a few miles of line into Canada.

During 1969, railways in Canada loaded 183 million tons of revenue freight and received another 24 million tons from American connections. Total tonnage carried was 207 million tons, down 4.1 per cent from 1968. Each ton was carried an average distance of 465 miles while the revenue received for hauling a ton of freight a distance of one mile averaged 1.46 cents. Mining strikes in 1969 were a major factor in the decline of tonnage.

Passenger traffic continued to decline with the number of passengers carried showing a decrease of 5.5 per cent to 18.9 million in 1969. The average distance each passenger travelled in 1969 was 123.8 miles; in 1968 it was 128.0 miles, while the average revenue per passenger mile rose to 2.69 cents from 2.51 cents the year before.

## Traffic

Less cargo was handled at Canadian ports in 1969 than in 1968. Total foreign tonnage handled declined by 4 per cent to 135 million tons from 141 million tons, while domestic unloadings at Canadian ports rose 2 per cent to 57.2 million tons from 56.1 million tons. Canadian ports handled approximately 115,304 arriving vessels in the year.

In 1969, Canadian exports declined to 77.6 million tons from 86.7 million in 1968. Of this total, iron ore decreased considerably to 30.4 million from 37.5 million tons. Wheat shipments (including re-exports) declined to 8.3 million from 11.2 million tons while corn shipments rose to 1.3 million from 0.6 million; soyabeans, to 1.0 million from 0.5 million; and gypsum, to 4.8 from 4.4 million.

Marked declines in such commodities as pulpwood, lumber and timber, and potash contributed to the over-all decrease in exports.

Of the 57.2 million tons of cargo imported in 1969, bituminous coal once again accounted for over 16 million tons. Soyabeans at 1.5 million (0.8 million in 1968), alumina and bauxite at 3.6 million (3.3), and crude petroleum at 7.5 million (6.5) contributed to increased imports.

Canals provide Canada with one of its most essential forms of transportation. During 1969 some 63.2 million unduplicated tons of freight passed through Canadian canals. Of this tonnage 61.9 million was handled in the St. Lawrence-Great Lakes system.

## Shipping, Harbours and Canals

**Facilities.** Coastlines on three oceans; the St. Lawrence and Mackenzie Rivers; Lake Winnipeg; and Hudson Bay—these are some of the basic geographical features of Canada which have led to the pattern of water transportation in Canada today.

Canadian waterways—canals, lakes and rivers—are open on equal terms to the shipping of all countries of the world, except for the Great Lakes-St. Lawrence sys-

The St. Lawrence Seaway at Montreal, Que.



tem from Havre Saint Pierre. In 1966, the exclusive right to carry goods and passengers between Canadian ports in this system was reserved for vessels of Canadian registry.

There were 10 ports in Canada that handled 5 million tons of cargo or more in 1969. Of these, Sept-Îles (19.1 million tons) and Port Cartier (12.3) were largely engaged in the export of Labrador and Quebec iron ore, and Thunder Bay (13.9 million tons) was engaged primarily in the grain trade. Vancouver and Montreal, with some 23.9 and 17.7 million tons respectively, were the largest general cargo ports. Hamilton and Toronto, together accounting for some 17.5 million tons, were largely engaged in the import of raw materials and foodstuffs for the busy and populous Ontario peninsula.

The major canal systems of Canada are the St. Lawrence Seaway, providing navigation from Montreal to Lake Ontario; the Welland Ship Canal which bypasses the Niagara River between Lakes Ontario and Erie; and the Sault Ste Marie Canal between Lakes Huron and Superior. The 16 locks in these 3 major canal systems overcome a drop of 580 feet from Thunder Bay to Montreal. The Seaway accommodates all but the largest ocean-going vessels, and has opened the Great Lakes to an estimated 80 per cent of the world's salt-water fleet. Subsidiary canals used to regulate water-levels include the connection between the Bras d'Or Lakes in Nova Scotia and the Atlantic; the canals on the Richelieu and Ottawa Rivers; the Rideau Canal between Ottawa and Kingston; and the canals connecting Lake Ontario and Georgian Bay.

## Civil Aviation

Canadian airlines of all classes conveyed a total of 12,030,479 passengers on all of its services in 1970, both in Canada and abroad. Of this total, 9,068,364 passengers travelled on domestic flights and 2,962,115 on international flights. Scheduled services accounted for a total of 10,167,807 passengers which represents 84.5 per cent of all passengers transported during 1970 by all Canadian carriers.

These services are provided by Air Canada and CP Air, which are designated as transcontinental carriers, and Eastern Provincial Airways, Quebecair, Transair Ltd., Nordair, and Pacific Western Airlines as regional carriers. 2,718,714 passengers were carried by Canada's two international flag carriers, Air Canada and CP Air. Countries served by these airlines on scheduled services are: the United States, Britain, Eire, Denmark, the Netherlands, France, Germany, Switzerland, Czechoslovakia, Russia, Spain, Portugal, Italy, Greece, Israel, Japan, Hawaii, Australia, Hong Kong, Mexico, Peru, Chile, Argentina, and the Commonwealth Caribbean. Aside from scheduled services, Canadian air companies also carried 458,587 passengers on charter flights to all parts of the world during 1970.

A total of 480 air carriers provides services throughout Canada and other countries. They perform a wide range of operations from aerial construction, crop dusting, hospital services, carriage of passengers and cargo, to recreational flying and flying training. These air carriers operate year-round in Canada's most northerly parts as well as its more developed areas.



### Statement of Operations of Canadian Carriers, 1969 and 1970

	Scheduled carriers		Non-scheduled carriers		Total	
	1970	1969	1970	1969	1970	1969
Operating revenues (\$ millions) .....	714.2	599.4	107.5	103.3	821.7	702.7
Passengers (unit toll) .....	554.2	470.9	8.3	9.8	562.5	480.7
Goods (unit toll) .....	101.6	83.7	3.6	5.6	105.2	89.3
Charter and contract .....	49.7	33.3	75.2	70.8	124.9	104.1
Specialty and non-flying .....	8.8	11.5	20.4	17.1	29.2	28.6
Net income after taxes (\$ millions) .....	-1.1	3.3	2.4	4.2	1.3	7.5
Revenue traffic carried:						
Passengers (No. millions) .....	10.6	9.1	1.4	1.2	12.0	10.3
Goods (lb. millions).....	465.9	396.8	168.6	154.0	634.5	550.8

### Aircraft and Personnel Licences

The number of civil aircraft of all kinds registered in Canada rose from 6,270 at the end of 1963 to 11,315 at the end of 1970. This 1970 figure also represents an increase of 1,253 over the 10,062 recorded in 1969. On December 31, 1970, the total personnel licences in force numbered 39,587, up 2,254 from the 37,333 of the previous year.

### Aircraft Movements

During 1970, 47 airports with DOT air-traffic control towers reported a total of 4,375,369 aircraft landings and take-offs. This is an increase of 1.0 per cent over 1969 when 46 DOT towers reported 4,325,568 movements. This represents an increase over the seven-year period since 1964 of 91.2 per cent. In 1964, the 33 towers in operation reported 2,288,504 movements.

An analysis of itinerant movements (take-offs and landings) by type of power shows that jet aircraft continued to capture an ever-increasing share of the total number of flights, up to 23.3 per cent of the 1970 total from 19.9 per cent in 1969. This is accompanied by a drop in turbo-prop activity from 15.8 per cent in 1969 to 14.0 per cent in 1970.

### Distribution of Itinerant Movements<sup>1</sup> at DOT Tower-Controlled Airports by Type of Power Plant, 1970, 1969, 1968

Aircraft type	1970		1969		1968	
	Number	Per cent	Number	Per cent	Number	Per cent
Piston .....	1,119,486	59.2	1,111,377	61.1	1,044,869	62.6
Turbo-prop .....	264,913	14.0	286,702	15.8	325,958	19.6
Jet .....	440,533	23.3	362,977	19.9	248,256	14.9
Helicopter .....	63,618	3.4	57,125	3.1	47,474	2.8
Glider .....	1,143	0.1	2,324	0.1	1,051	0.1
<b>Total .....</b>	<b>1,889,693</b>	<b>100.0</b>	<b>1,820,505</b>	<b>100.0</b>	<b>1,667,608</b>	<b>100.0</b>

<sup>1</sup> A take-off or a landing of an aircraft that is departing for another airport, or arriving from one.



Canadair's V/STOL (vertical/short take-off and landing) aircraft combines the advantages of a helicopter with those of a fixed-wing aircraft: within 10 seconds of a vertical ascent the plane can make the transition from hovering to a speed of 100 knots.

Hovercraft are used to make hydrographic surveys along the Arctic coast in the vicinity of Franklin Point, N.W.T.



## International Trade

Canada's trade balance increased from \$801 million in 1969 to an extraordinary level of \$2,946 million in 1970. This change of \$2,145 million resulted from a rise of \$1,955 million in the value of exports, and a fall of \$190 million in the value of imports.

The rate of increase in the value of exports was greater than in 1969, but less than in 1968. Most of the increase was in volume rather than in price. While the unit value index of domestic exports rose by 2.5 per cent in 1969 and 2.7 per cent in 1970, the index of physical volume rose by 6.6 per cent and 10.5 per cent. The downward movement in the value of imports also was in volume rather than price. While the unit value index of imports rose by 2.3 per cent in both 1969 and 1970, the index of physical volume rose by 12.4 per cent in 1969, but dropped by 4 per cent in 1970.

### International Background

Canada held the sixth position among the leading trading nations of the world in 1968 and 1969, behind the United States, the Federal Republic of Germany, the United Kingdom, France, and Japan. In terms of trade per capita, Canada moved from fifth position in 1968 to sixth, behind Denmark, in 1969.

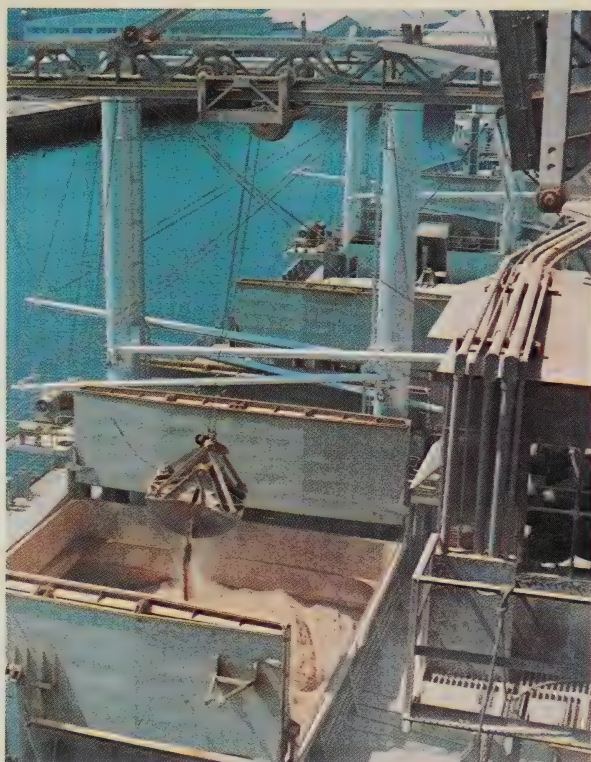
### Foreign Trade of Canada, 1964-70

Year	Exports			Imports	Total Trade	Balance of Trade
	Domestic Exports	Re-exports	Total Exports			
	(Millions of dollars)					
1964 .....	8,094	209	8,303	7,488	15,791	+ 815
1965 .....	8,525	242	8,767	8,633	17,400	+ 134
1966 .....	10,071	255	10,325	9,866	20,191	+ 459
1967 .....	11,121	299	11,420	11,075	22,495	+ 345
1968 .....	13,270	354	13,624	12,358	25,982	+1,266
1969 .....	14,504	428	14,931	14,130	29,062	+ 801
1970 .....	16,458	428	16,886	13,940	30,826	+2,946

Important changes in foreign exchange rates — the amount of Canadian currency exchanged per unit of foreign currency — have affected Canadian exporters and importers since 1966. Britain and France devalued and Germany revalued their currencies. Canada refloated the Canadian dollar at the end of May 1970. One year later, Belgium, Germany, and the Netherlands allowed the price of their currencies to float, like the Canadian, to higher levels, while Austria and Switzerland revalued their currencies. With the announcement in 1971 by the President of the United States of his new economic policy, the conversion of the U.S. dollar into gold was suspended. In consequence, the American dollar and other major currencies, including the Japanese yen, have been floating, subject to some control by the national monetary authorities.



Bauxite from Guyana is unloaded at Port Alfred, Que., to be refined to alumina at Alcan's Arvida plant. The alumina is then reduced to aluminum in a smelter.



In June 1970 formal opening negotiations began for Britain, the Irish Republic, Denmark, and Norway, with the European Economic Community (EEC) for membership in the latter customs union. Since September 1970, actual negotiations have been carried forward. British membership in the Community, if achieved, will have a major impact on Canadian access to the British market, and modify Canada's competitive position in the EEC market, comprising, at present, Belgium, France, the Federal Republic of Germany, Italy, Luxembourg, and the Netherlands.

### Commodity Pattern

**Exports.** Total exports rose by \$1,955 million from 1969 to a level of \$16,886 million in 1970. By commodity sections, food, feed, beverages, and tobacco accounted for \$401 million of the increase, crude materials for \$600 million, fabricated materials for \$705 million, and end products for \$239 million.

Of the major commodity groupings, motor vehicles and parts remained practically unchanged from previous years, owing in part to the General Motors strike, to further adjustments in the North American auto market, and to the slowdown of

the American economy in 1970. Nevertheless, motor vehicles and parts remained Canada's leading domestic export.

Sales of wheat and barley, woodpulp, crude petroleum, iron ore, copper, nickel, fertilizers, metal fabricated basic products, and plate, sheet, and strip steel gained strongly. Substantial wheat sales, notably to the Soviet Union, to countries in the Mediterranean area (including Algeria, the United Arab Republic, and Syria) and to Latin American countries such as Brazil, Peru, and Cuba, eliminated the drop in this major commodity in 1969.

The recovery in metals and metal products in 1970 followed production shut-downs and industrial disputes in the preceding year. Iron ores and concentrates increased by 43 per cent in 1970 after a drop of 25 per cent in 1969; copper and alloys advanced by 58 per cent after a decline of 20 per cent in the preceding year; and plate, sheet, and strip steel shipments climbed by 75 per cent after falling 42 per cent in 1969.

### Principal Domestic Exports, 1966-70

Commodity	1966	1967	1968	1969	1970
	Values in '\$000				
Motor vehicles and parts .....	993,596	1,739,160	2,690,832	3,561,539	3,570,093
Passenger automobiles and chassis .....	429,624	883,862	1,397,510	1,839,225	1,719,496
Motor vehicle parts, except engines .....	252,858	365,104	556,154	722,935	781,889
Trucks, truck tractors and chassis .....	145,190	280,147	401,880	562,041	553,954
Motor vehicle engines and parts .....	137,857	158,907	246,711	289,265	329,217
Other motor vehicles .....	28,067	51,140	88,577	148,073	185,537
Newsprint paper .....	968,224	955,261	989,831	1,125,801	1,110,393
Woodpulp (and similar pulp) .....	520,068	543,433	627,874	627,874	785,229
Wheat .....	1,060,670	741,878	684,469	472,703	687,431
Crude petroleum .....	321,681	397,875	446,413	525,780	649,075
Lumber, softwood .....	439,569	474,604	623,414	664,759	638,242
Iron ores and concentrates .....	369,009	383,063	443,202	333,131	475,743
Copper and alloys .....	266,067	336,723	378,216	300,904	474,591
Aluminum including alloys .....	372,275	398,910	445,128	474,752	458,638
Nickel and alloys .....	212,433	229,297	245,433	226,079	434,214
Nickel in ores, concentrates and scrap .....	186,725	203,981	261,030	225,312	368,467
Copper in ores, concentrates and scrap .....	130,898	157,464	233,343	233,727	262,750
Asbestos unmanufactured .....	182,484	172,397	192,896	216,275	227,248
Fertilizers and fertilizer materials .....	139,560	154,623	168,882	171,918	221,207
Natural gas .....	108,750	123,664	153,752	176,188	205,988
Whisky .....	127,508	141,514	158,253	189,074	183,140
Aircraft parts, except engines .....	118,090	183,312	199,751	159,665	180,649
Metal fabricated basic products .....	52,595	57,404	70,307	84,903	134,871
Barley .....	44,957	72,609	40,043	30,426	133,478
Plate, sheet and strip steel .....	76,956	88,795	109,136	75,185	131,509
Zinc in ores, concentrates and scrap .....	77,745	94,126	99,593	102,611	117,996
Aircraft engines and parts .....	72,658	94,307	107,288	102,718	109,983
Office machines and equipment .....	37,870	52,326	49,865	71,152	104,925

**Imports.** From 1969 to 1970 imports fell by \$190 million to a level of \$13,940 million. By commodity section, falling orders for end products accounted for \$279 million, special trade transactions for \$31 million, and fabricated materials for \$20

million of the drop—offsetting larger orders of \$41 million for food, feed, beverages, and tobacco and \$86 million for crude materials. The drop in imports is in line with the slower growth in Canada's Gross National Product in 1970 and reflects in part the year-end General Motors strike.

The year 1970 was the first to record a decline in trade of automotive products since the inception of the Canada—United States auto pact of 1965. Motor vehicles and parts imported were down by \$307 million over the year before.

Imports that increased despite the over-all fall included crude petroleum, coal, inorganic chemicals, metalworking machine tools, coffee, and sugar.

### Principal Imports 1966-70

Commodity	1966	1967	1968	1969	1970
	Values in \$'000				
Motor vehicles and parts .....	1,580,176	2,168,363	3,000,856	3,545,966	3,239,411
Motor vehicle parts except engines .....	844,995	998,257	1,342,300	1,764,793	1,653,049
Sedans, new .....	348,632	669,706	940,986	908,483	781,531
Motor vehicle engines .....	111,749	144,509	244,462	313,491	270,006
Trucks, truck tractors and chassis .....	69,954	120,731	167,501	236,991	232,574
Motor vehicle engines and parts .....	91,344	91,344	109,849	127,078	104,252
Other motor vehicles .....	51,006	54,218	72,465	83,485	101,683
Other passenger automobiles and chassis .....	28,970	41,823	64,443	61,978	68,190
Convertible automobiles, soft top, new ...	33,526	47,775	58,850	49,667	28,126
Crude petroleum .....	299,001	355,416	372,586	393,453	415,161
Aircraft complete with engines .....	73,037	147,509	233,704	202,649	205,883
Tractors .....	230,973	233,508	196,661	194,401	188,594
Electronic computers .....	93,495	115,902	108,606	160,527	176,290
Coal .....	141,038	145,544	160,390	114,603	150,832
Inorganic chemicals .....	64,800	64,825	67,710	77,731	140,322
Organic chemicals .....	106,571	116,003	129,036	138,030	133,543
Plate, sheet and strip steel .....	117,008	117,230	103,175	155,519	128,875
Machine tools, metal working .....	97,649	101,210	82,008	110,637	127,760
Books and pamphlets .....	77,905	96,232	105,392	122,344	126,078
Fuel oil .....	102,775	119,824	142,497	131,436	122,225
Plastic materials, not shaped .....	74,140	80,868	99,433	114,830	112,190
Aircraft parts, except engines .....	83,350	109,965	115,944	112,282	102,830
Aluminum ores, concentrates and scrap ...	76,623	74,587	83,668	102,942	99,590
Coffee .....	72,389	78,027	83,302	82,105	97,956
Meat, fresh, chilled or frozen .....	39,609	40,257	47,975	98,612	96,911
Television and radio sets and phonographs	41,956	56,200	68,168	92,343	90,485
Air conditioning and refrigeration equip. ...	59,904	73,542	87,534	81,124	87,386
Raw sugar .....	44,873	47,575	46,411	70,287	85,275

### Area Pattern

During 1970 about two thirds of Canada's trade was with the United States. Canada shipped to the United States 65 per cent of its exports and bought from that country about 71 per cent of supplies that were imported. The United Kingdom, the second largest customer and supplier, accounted for 9 per cent of exports and 5 per cent of imports. The proportion of Canada's trade with the United Kingdom has been decreasing.





This CN team of Canadian experts is running Zambia Railways while training Zambians in management techniques, according to an agreement between Canada and Zambia.

Conversely, trade with Japan, which ranks third in terms of Canadian trade, has been increasing in both value and market share. Exports to Japan and imports from Japan rose 27 per cent and 17 per cent in 1970.

Other major markets for Canadian exports were the Federal Republic of Germany, the Netherlands, Australia, Belgium and Luxembourg, Italy, Norway, and France. Each absorbed over \$150 million of Canadian exports.

Sales to the Soviet Union rose sharply in 1970 after falling off in the preceding year, largely owing to fluctuations in the demand for Canadian wheat.

Reduced supplies from the United States, the United Kingdom, Venezuela, Belgium and Luxembourg, and Mexico contributed to the over-all fall in Canadian imports. The leading suppliers continued to be the United States, the United Kingdom, and Japan. Following these were the Federal Republic of Germany, Venezuela, France, Australia, Italy, and Sweden. Each supplied Canada with over \$100 million worth of goods.

A Foremost vehicle is tested before it is shipped to Russia.



**Domestic Exports by Leading Countries, 1966-70**

Country	1966	1967	1968	1969	1970
	Values in \$'000				
United States .....	6,027,722	7,079,396	8,941,501	10,273,650	10,641,119
United Kingdom .....	1,122,574	1,169,053	1,209,567	1,096,480	1,479,953
Japan .....	393,892	572,156	606,787	624,795	793,079
Germany, Federal Republic .....	176,800	177,955	228,733	277,382	383,681
Netherlands .....	143,113	176,431	178,850	184,966	277,189
Australia .....	117,359	156,249	185,717	163,258	197,750
Belgium and Luxembourg ...	117,505	100,800	126,648	116,232	189,943
Italy .....	114,787	141,439	131,210	133,671	183,961
Norway .....	107,014	87,423	116,559	103,645	176,235
France .....	84,541	80,608	81,516	128,583	154,201
People's Rep. of China .....	184,879	91,306	163,243	122,891	141,995
India .....	107,662	140,592	111,255	95,552	129,842
Venezuela .....	75,958	82,049	102,671	92,902	111,391
South Africa .....	74,393	77,690	68,341	78,501	104,005
U.S.S.R. ....	320,605	128,663	88,569	9,071	101,553
Mexico .....	52,145	49,202	54,589	72,873	91,698
Brazil .....	21,157	27,540	48,200	50,246	87,387
Spain .....	36,900	39,623	41,114	55,908	64,506
Argentina .....	39,529	33,380	48,017	62,315	59,129
Cuba .....	61,436	42,390	44,988	40,739	58,900

**Imports by Leading Countries, 1966-70**

Country	1966	1967	1968	1969	1970
	Values in \$'000				
United States .....	7,135,611	8,016,341	9,048,372	10,243,147	9,905,110
United Kingdom .....	644,741	673,050	696,085	790,973	738,261
Japan .....	253,051	304,768	360,180	495,704	581,715
Germany, Federal Republic..	235,207	256,879	298,869	354,715	370,934
Venezuela .....	215,059	276,327	357,862	345,596	339,212
France .....	106,651	130,080	121,647	151,841	158,358
Australia .....	59,573	64,471	75,990	96,285	146,148
Italy .....	86,718	110,269	114,492	141,193	144,973
Sweden .....	72,541	76,242	78,091	84,505	105,888
Switzerland .....	50,279	66,022	64,326	83,930	80,831
Netherlands .....	60,489	64,783	69,052	78,678	78,923
Hong Kong .....	38,911	51,040	58,354	72,942	78,486
Netherlands Antilles .....	38,511	60,293	49,658	50,395	54,178
Taiwan .....	13,089	23,569	34,379	42,456	51,936
Belgium and Luxembourg ...	61,555	64,620	57,520	60,936	51,504
Brazil .....	35,777	31,436	38,725	38,725	49,311
Norway .....	33,774	33,761	39,204	44,895	49,132
Mexico .....	33,539	29,535	52,167	64,085	47,344
South Africa .....	27,641	37,060	39,315	45,944	45,702
Austria .....	15,192	19,715	28,563	38,878	45,614

**Balance of International Payments**

The growth of the Canadian economy has been fundamentally linked to the nation's ability to develop its resources and to become a partner in the world

market as a trading nation. This development has been assisted, in part, by the availability of foreign capital, and the willingness of foreign investors to commit considerable sums of money in Canada as both equity capital and long-term debt.

This increasing investment in Canada has had an effect on imports and exports, on the supply of services by non-residents to industry, and has ultimately led to an increasing flow of interest and dividends to non-residents. Statistics related to these transactions are included in Statistics Canada's publication *Canadian Balance of International Payments*. Many other transactions are also identified in this report, including Canadian investment in other countries of the world. In brief the balance of international payments of a country has been defined in the Conference Board's publication *Understanding the Balance of Payments*, as "a systematic record of the economic transactions during a given period between the residents of the country and residents of the rest of the world."

In Canada these economic transactions are summarized within the current and the capital accounts sectors of the *Canadian Balance of International Payments*. Transactions included in these accounts are brought into balance by reflecting changes in Canada's official monetary movements during the interval covered. The current account outlines exchanges of goods and services coupled with unilateral receipts and payments of transfer transactions. The capital account identifies transactions associated with changes in Canada's assets and liabilities as



A young hockey player tries on Canadian pants and knee pads in Berne, Switzerland.



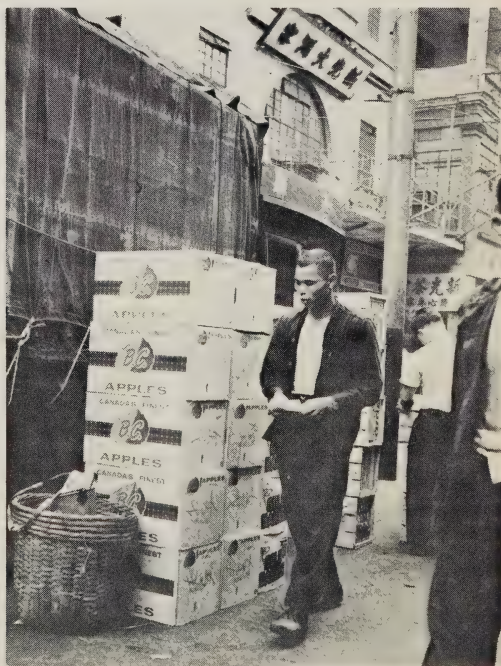
determined by Canadian investment outside Canada and non-residents' investment in Canada.

Within the current account in recent years, merchandise imports made up 70 per cent of total current payments, on the average, while merchandise exports approximated 78 per cent of current receipts. Moreover, there has been a continual favourable trade balance between Canada and other countries since 1961.

During 1970, Canada's merchandise exports continued to expand, partly in response to buoyant conditions in some western European countries and Japan. Merchandise imports became sluggish during 1970 reflecting a relatively subdued pace of economic activity in Canada and the United States. This merchandise trade produced a record trade surplus of \$3,002 million in 1970.

Sales of wheat, forest products, copper, and nickel contributed to a one-third increase in the value of exports to overseas countries while exports of iron ore, copper, nickel, crude petroleum, and natural gas continued to gain in trade with the United States. However, during the fourth quarter, a continent-wide strike against General Motors acted as a moderating influence in automobile sales on the open market. Preliminary statistics on the number of automobiles and commercial vehicles produced in Canada reflected a decrease of approximately 161,000 cars from 1969 to 1970. Imports of automobiles also declined by 10 per cent. Wheat sales by Canada, on the other hand, influenced by a decline in world prices as well

Cartons of apples from British Columbia are unloaded in the warehouse district of Hong Kong.



as by drought in such normal wheat-exporting countries as Argentina, France, and Australia, made significant gains during 1970. Large volumes of wheat were delivered to state-trading countries, in particular the Soviet Union. The decline in wheat prices was brought about by the termination of the International Grains Arrangement in 1969. During the 1968-69 crop year, Number One Northern wheat yielded an average of \$1.95 a bushel at the Lakehead. In July 1970 this price had declined to \$1.73 a bushel.

Although trade is an important segment of the current account, receipts and payments in service transactions normally determine if there is to be a surplus or a deficit in this sector. Every year since 1949 Canada has had a deficit on service transactions with other countries. With non-resident investment in Canada growing much faster than Canada's investment abroad, interest and dividend payments have consistently exceeded receipts. In 1970 payments exceeded \$1,500 million, culminating in a deficit of over \$1,000 million in this account, the largest ever.

Although dividend and interest payments constitute a substantial outflow of funds, which in part reflects the substantial non-resident investment in Canada, it is important to stress that in general for each dollar net profit earned by wholly non-resident-owned industry in Canada, fifty-nine cents is normally retained in Canada as tax revenue. Also substantial non-resident investment flows during the 1965-69 period in the automotive industry were probably a factor in providing increased employment in this business. The number of employees engaged in motor vehicle assembly and manufacturing establishments (according to Statistics Canada's classification) increased from 69,264 in January 1964 to 83,987 in January 1970.

With Canada's increasing trade, new facilities were brought into use in order to cope with the increased shipments to overseas countries, and larger tankers were used in the transport of oil. Roberts Bank, a new port developed in British Columbia primarily to handle coal shipments to Japan, opened for business in April 1970, when the first shipment of coal left by transport. At Canport, N.B., new docking facilities, providing accommodation for tankers of up to 250,000 tons, were opened.

Earnings from foreign importers of Canadian products received by these ports are included in the freight and shipping account. Other transportation facilities earning foreign revenue are Canadian ships either owned or chartered, railways, trucks, pipelines, and aircraft. Similarly it is necessary to pay transportation expenses for Canadian imports using foreign transportation facilities including the leasing costs of foreign-owned ships.

Other service accounts consist of business service receipts and payments, travel, government transactions, and various forms of miscellaneous income and expenses. In recent years, there has been an increasing trend for Canadians to take advantage of economical charter flights to Europe and the Caribbean, causing a demand for foreign currency which has not been offset by the expenditure of foreign citizens visiting Canada. With the exception of 1967, a year in which Canada's centennial celebrations including Expo attracted an unusually high number of tourists, the travel account has added to the deficit on current account. In contrast to many other countries of the world, Canada has no restrictions on the amount of Canadian currency that may be taken out of the country, and this would

contribute to the deficit on travel account with Europe and Asia in particular.

Transfer payments and receipts consist of transactions which by their nature never give rise to offsetting monetary receipts or payments. An immigrant enters Canada with funds in hand, a donation of wheat is made to an underdeveloped country, a church in Canada remits funds to overseas missionaries: all are items representative of transfer transactions. In this instance the donation of wheat would be included in Canada's exports. The value of the wheat would be included in official contributions, if the donor was a government agency.

Canadian assistance to the underdeveloped regions of the world, as reflected in the official contributions account, increased by \$57 million from 1969 to 1970. Although much of this assistance consisted of aid disbursed under the international food aid program, extensive technical assistance has also been provided to developing countries by way of grants to international organizations concerned with multilateral assistance programs.

## Capital Account

Although the capital account has not been included in the accompanying Table, capital transactions are as important and relevant to the Canadian balance of inter-

**Balance of International Payments between Canada  
and all Countries, 1965-70**

Item	1965	1966	1967	1968	1969	1970
<b>Current Receipts</b>	(Millions of dollars)					
Merchandise exports (adjusted) .....	8,745	10,326	11,338	13,537	14,874	16,841
Services:						
Gold production available for export .....	138	127	112	120	108	95
Travel expenditures .....	747	840	1,318	978	1,074	1,219
Interest and dividends .....	322	318	295	353	414	513
Freight and shipping .....	668	758	830	891	936	1,048
Other service receipts .....	562	676	770	840	1,235	1,377
Transfer receipts						
Inheritances and immigrants' funds .....	216	268	329	370	363	388
Personal and institutional remittances .....	83	83	93	95	91	99
<b>Total Current Receipts .....</b>	<b>11,481</b>	<b>13,396</b>	<b>15,085</b>	<b>17,184</b>	<b>19,095</b>	<b>21,580</b>
<b>Current Payments</b>						
Merchandise imports .....	8,627	10,102	10,772	12,162	14,014	13,839
Services						
Travel expenditures .....	796	900	895	1,008	1,292	1,454
Interest and dividends .....	1,086	1,140	1,211	1,259	1,345	1,524
Freight and shipping .....	761	823	861	931	991	1,012
Other service transactions .....	904	1,090	1,277	1,441	1,694	1,858
Transfer payments						
Inheritances and emigrants' funds .....	211	198	213	209	194	211
Personal and institutional remittances .....	133	139	173	148	172	184
Official contributions .....	93	166	182	133	144	201
<b>Total Current Payments .....</b>	<b>12,611</b>	<b>14,558</b>	<b>15,584</b>	<b>17,291</b>	<b>19,846</b>	<b>20,283</b>
<b>Current Account Balance .....</b>	<b>-1,130</b>	<b>-1,162</b>	<b>-499</b>	<b>-107</b>	<b>-751</b>	<b>+1,297</b>





New cars await shipment at Toronto harbour.

national payments as those of the current account. The measured flows of direct investment in Canada are limited to those areas of the economy in which non-residents effectively control, through the ownership of shares, the net assets of Canadian operating subsidiaries or branches. Inflows to these Canadian industries consist of the value of goods and services as well as funds provided by either the non-resident parent company or the principal owner. These constitute an investment in the recipient organization. In 1970, \$760 million entered Canada as direct investment, up from \$655 million in the preceding year.

Sales and purchases of securities—both new issues and outstanding stocks and bonds—are also identified in the capital sector. During 1970 sales of new issues were materially affected by a series of events which precipitated among other things the decline of \$798 million from 1969 to 1970 in capital inflows from the sale of new Canadian issues. A gradual easing of monetary conditions in Canada, and an official request to provincial finance ministers to limit their issues abroad, prompted Canadian borrowers to obtain a greater proportion of their funded debt requirements on the domestic market. Other factors that may have affected the situation include the most protracted slide in stock prices in recent years on North American exchanges causing investors to re-evaluate their holdings.

Although Canada assists many underdeveloped nations through grants and technical assistance, considerable help is also provided in the form of long-term loans at relatively low interest rates. These loans are included in the capital account. In 1970, \$142 million was included as an outflow in this account; in the preceding year it was \$89 million. A typical example of such a loan is the credit arrangement extended through the Canadian International Development Agency to assist the Government of Botswana in the purchase of electrical equipment required for a base metal development in that country.

The balancing entry in the Canadian balance of international payments is reflected in the *Official International Monetary Assets and Liabilities*. On December 31, 1970, Canada's net official monetary assets totalled U.S. \$4,679 million, an increase of U.S. \$1,574 million over the year. As a result of this build-up in reserves which by May 31, 1970, already reflected an increase of U.S. \$978 million, the Minister of Finance stated that the Canadian authorities would no longer peg the Canadian dollar to within 1 per cent of its par value of 92½ cents. By December 31, 1970, the spot value of the U.S. dollar on the Canadian exchange market was 101.13 Canadian cents.

## International Travel

Travellers to Canada and Canadians travelling abroad spent \$2,673 million in 1970. Canadians spent \$1,454 million abroad and on non-Canadian transportation, while visitors spent an estimated \$1,219 million in Canada and on Canadian transportation. The importance of international visitors to the Canadian economy is illustrated by the fact that in 1970, receipts from international travel made it the second largest earner of export dollars, exceeded only by the sale of motor vehicles and parts.

Statistics on international travel in Canada are developed from two main sources: the number of travellers coming into Canada reported at the time of their entry by customs or immigration officials, and the information supplied on questionnaires which some travellers are asked to fill out and return to Statistics Canada. Statistics are exchanged with the United States Department of Commerce under a co-operative arrangement.

Since travellers who stay overnight are of greater importance to the tourist industry of a country than those who spend only a day, an effort is made to distinguish between the two categories. Canada-United States travel statistics are given separate treatment because of the proximity of the two countries and the great amount of travel across their common border.

Toronto International Airport, Malton, Ont.







### Visitors to Canada

The vast majority of visitors to Canada every year are American residents. In 1970, 37.2 million visits were made to Canada by American residents, 3.9 per cent more than in 1969. Persons arriving and leaving the same day accounted for two thirds of all visits by residents of the United States. Of the total number of visits in 1970, 87 per cent or 32 million were made by automobile. Some other modes of transportation used by American visitors included airplanes, by 1.3 million people; buses, by 1.1 million; boats, by 0.6 million; and railways by 0.1 million. Arrivals of Americans by automobile, plane, bus, and boat all increased in 1970, but arrivals by rail decreased by approximately 30 per cent from 1969.

Questionnaire data for 1969 indicate that the average length of stay of all visitors from the United States to Canada (including those coming and returning in one day) was 2.7 days and the average expenditure per person per day was \$10.00. Travellers arriving by plane, bus, or rail generally stayed longer and spent more per day. Those who travelled by automobile and stayed overnight in Canada remained 5.6 days, on the average.

Only about 1.5 per cent of the total visitors from abroad were from overseas but they spent 10 per cent of visitors' expenditures. In 1970, overseas visitors numbered 535,000, an increase of 15.6 per cent over 1969. The ten leading countries from which overseas visitors came to Canada in 1970, were the United Kingdom (157,000), the Federal Republic of Germany (41,300), France (36,900), the



Netherlands (28,000), Japan (22,000), Italy (18,600), Australia (17,000), Jamaica (11,400), Mexico (10,700), and India (9,400).

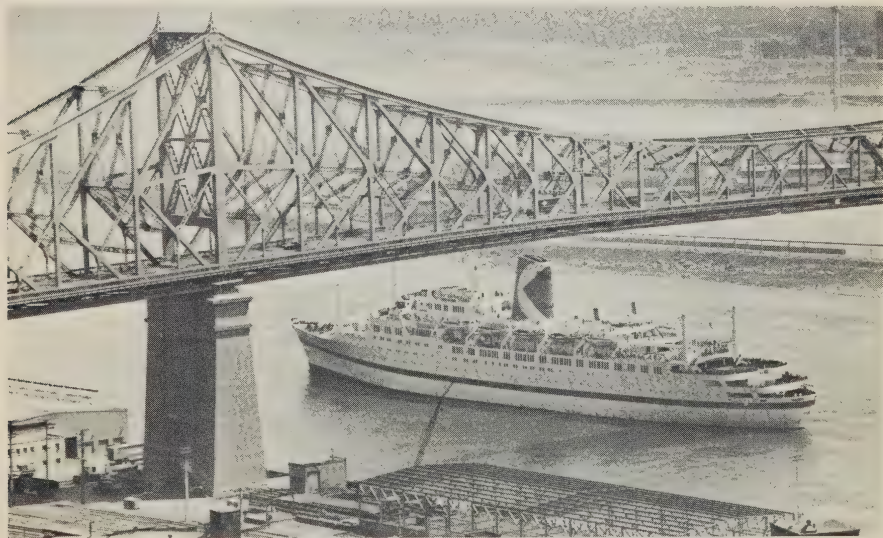
### Canadian Travel Abroad

The vast majority of Canadians who travel abroad continue to go to the United States. But, whereas in 1970 the number going to the United States increased only fractionally to 35.7 million, the number going overseas increased to over one million or by about 70 per cent from only two years earlier.

The number of automobile travellers—who accounted for 86.1 per cent of all trips to the United States—increased slightly. Of these, 7.8 million stayed one or more nights, while 22.9 million left and returned to Canada on the same day. Travel to the United States by all other modes of transportation declined. Canadians returning by airplane numbered 1.2 million; by bus, 700,000; and by rail and boat, 100,000.

Questionnaire data for 1969 show that Canadians who remained one or more nights in the United States stayed six days. The regions of Canada in which these long-term travellers resided were: the Atlantic Provinces 0.5 million, Quebec 3.3 million, Ontario 3.5 million, the Prairie Provinces 1.1 million, and British Columbia and Yukon Territory 1.0 million. Their destinations were in the following regions: New England (30 per cent), Middle Atlantic (21 per cent), Pacific (13 per cent), South Atlantic (12 per cent), and East North Central (10 per cent), West North Central (7 per cent), Mountain (5 per cent), other regions (2 per cent). Most Canadian residents returning from the United States in 1969 gave the main purpose of their trip as holidays (59 per cent), followed by visiting friends or relatives

The *Empress of Canada* passes under the Jacques Cartier bridge in Montreal, Que., on its way to Britain.



(25 per cent), business (9 per cent), shopping (4 per cent), and other purposes (3 per cent).

Canadian residents returning from overseas countries in 1970 totalled 1,099,400, an increase over 1969 of 247,000 individuals. Again in 1970, most returned through Toronto or Montreal International Airports. Canadians travel overseas mainly for recreation and holiday and the United Kingdom is most often their destination. In 1969, the average duration of overseas trips was 26 nights and the average per capita expenditure was \$468, excluding fares on Canadian carriers.

### Travel Between Canada and Other Countries, 1967-69

Visitors to Canada	Numbers			Expenditures		
	1967	1968	1969	1967	1968	1969
	(Thousands of visits)			(Millions of dollars)		
From the United States						
Entering and leaving the same day .....	24,511	23,068	23,454	124	120	121
Staying more than one day .....	15,465	11,708	12,312	1,040	771	840
Totals .....	39,976	34,776	35,766	1,164	891	961
From countries other than the U.S. ....	590	362	463	154	87	113
<b>Total .....</b>	<b>40,566</b>	<b>35,138</b>	<b>36,229</b>	<b>1,318</b>	<b>978</b>	<b>1,074</b>
Canadian Travel Abroad						
To the United States						
Entering and leaving the same day .....	24,709	25,468	26,116	57	66	57
Staying more than one day .....	7,791	8,480	9,326	570	644	836
Totals .....	32,500	33,948	35,442	627	710	893
To countries other than the U.S. ....	522	638	852	268	298	399
<b>Total .....</b>	<b>33,022</b>	<b>34,586</b>	<b>36,294</b>	<b>895</b>	<b>1,008</b>	<b>1,292</b>



Swimmers going for a dip in New Brunswick.



Canadian brands on display at the International Food Salon in Paris.

## Industry, Trade and Commerce

The Department of Industry, Trade and Commerce seeks to promote the growth of the Canadian economy through the development of the manufacturing and processing industries and the expansion of trade and tourism. It comprises five major groups: Trade and Industrial Policy, Industry and Trade Development, Office of Economics, Office of Tourism, and Administration.

The **Trade and Industrial Policy** group recommends policies and programs to improve the growth and efficiency of Canadian industry, gain access to foreign markets for Canada's goods, and safeguard its trade relations with other countries.

The **Industry and Trade Development** group co-ordinates departmental operations at home and abroad involving industrial and trade development. It sets up and administers incentive programs and works closely with other federal agencies and provincial trade departments, as well as with the business and trade communities. Components of the group are: Operations, External Services (including the Trade Commissioner Service), a Grains Program Office and the Offices of Science and Technology, Design, and Promotional Services. The Operations unit includes nine industry sector branches: Aerospace, Marine and Rail; Agriculture, Fisheries and Food Products; Apparel and Textiles; Chemicals; Electrical and Electronics; Machinery; Materials; Mechanical Transport; and Wood Products.

The **Office of Economics** continually assesses current and prospective economic changes abroad affecting Canadian trade. It forecasts changes in the structure of industries and markets, analyzes capital investment in Canada and abroad, and does research into industrial productivity.

The **Office of Tourism**, comprising the Canadian Government Travel Bureau and the Travel Industry Branch, promotes travel by foreigners to Canada and within it as well as travel within the country by Canadians.



# Mass Media and Communications

## Telephones and Telecommunications

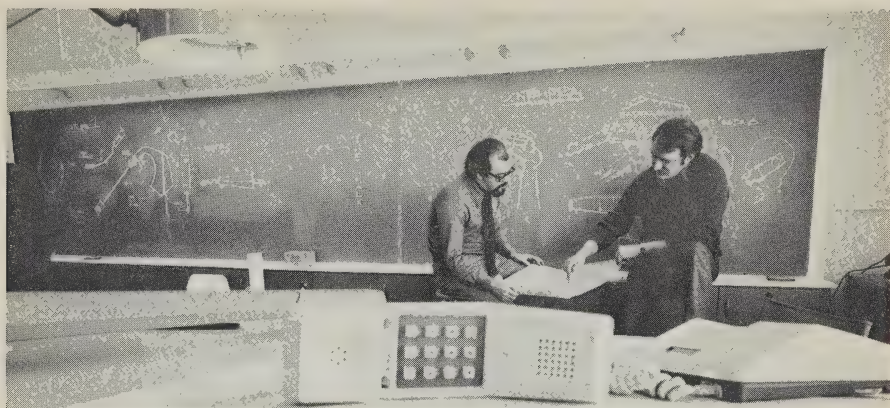
The geography of Canada, stretching from coast to coast and from the United States towards the North Pole, of itself gives a unique importance to the need for efficient telecommunications. The metropolitan centres of an increasingly urbanized population are separated by great distances, while vast areas of the country remain undeveloped. New forms of telecommunications are having a diminishing effect on space and time, and counteract these geographical disadvantages. The impending possibility of virtually instantaneous transfer of information in any form between all parts of the country not only helps to dispose of absolute distance as an obstacle to national trade and commerce but provides new prospects for reducing regional disparities and developing the Canadian North.

In most countries outside North America, telecommunications services are provided by the state. In Canada, the corporate structure, ownership, and control of telecommunications systems is very mixed: it is necessary to take into account not only the telephone and telegraph companies, the broadcasters and the cable-operators, but also the manufacturers of telecommunications equipment.

As a matter of general convenience, the history of telecommunications in Canada has been dealt with under such broad classifications as telegraph, telephone, and radiocommunication. But these are rather artificial distinctions and always have been. The word "telegraph" originally meant a device for transmitting messages of any kind over a distance by any means, whereas the word "telephone" has always been understood as an electronic device for transmitting voice-messages. Thus, the telephone is, in reality, only one specialized form of telegraph, and indeed the original telephone call made by Alexander Graham Bell in 1876 was carried on wires lent by the Dominion Telegraph Company. When a telephone company offers to transmit any kind of message by other than voice communication, it becomes also a telegraph company; equally, some Canadian telegraph companies provide telephone service in particular areas.

In 1968, 8,818,000 telephones in Canada were served by 2,067 companies offering public telephone service. In 1969, the number of telephones had increased to 9,296,000, but the number of telephone undertakings had declined to 1,888. Among the smaller incorporated companies, *La compagnie de téléphone des rangs 2 et 3 St. Victor du nord*, for instance, had only 15 telephones; Bell Canada alone (without its subsidiary companies), had 5,752,820 or 61.9 per cent of all the telephones in Canada.

Among Canadian industrial corporations, Bell Canada is the second largest in terms of total assets. The corporation holds, directly or indirectly, a majority interest in the four telephone companies principally serving the Maritime Provinces, and in a number of smaller companies operating in Quebec and Ontario. The Bell group of telephone companies, taken as a whole, owns nearly 70 per cent of the telephones in Canada and more than 94 per cent of the telephones east of Manitoba. In the manufacturing sector, Northern Electric Company Limited is a wholly-



The newest kind of telephone, the Contempra, is shown with its designers.

owned subsidiary of Bell Canada. The Bell group of companies, taken together, has total assets valued at more than \$3,500 million, gross revenues exceeding \$1,250 million, and some 45,000 employees. Bell Canada has more than 251,000 shareholders; of these, some 97.7 per cent, owning 95.4 per cent of all outstanding shares, live in Canada. The largest foreign stockholder is American Telephone and Telegraph (AT&T), with approximately 2.1 per cent of the outstanding shares; a service agreement between the two companies provides Bell Canada with advice and assistance on technical and operating matters for an annual fee.

A second important grouping is that under the direct or indirect control of General Telephone & Electronics Corporation (GT&E), which is incorporated and domiciled in New York. This group owns 11.7 per cent of the telephones in Canada through the British Columbia Telephone Company, *Québec-Téléphone*, and their subsidiary companies. In the manufacturing sector, a subsidiary of GT&E is the sole owner of Automatic Electric (Canada) Limited, together with its subsidiary companies.

In the three Prairie Provinces, telephone service is provided by provincial Crown Corporations — Alberta Government Telephones, the Manitoba Telephone System, and Saskatchewan Telecommunications. Together, they own some 12.8 per cent of the telephones in Canada. The two largest municipal systems are those in the cities of Edmonton and Thunder Bay; other municipal systems are relatively small.

Before the formation of the Trans-Canada Telephone System (TCTS) in 1931, Canada had to rely on transmission through the United States for most of its trans-Canada telephone routings. TCTS is a voluntary association of eight large telephone undertakings (which, with their subsidiaries, own 96 per cent of the telephones in Canada) working together to provide a complete communications network from coast to coast.



CN-CP telecommunications reach Inuvik, N.W.T. across the snowy plains.

The TCTS, although it is not incorporated, has a Board of Management—made up of directors representing all member companies—which meets frequently; all decisions are based on unanimous agreement. The Board is supported by operational and administrative committees which plan and co-ordinate nation-wide services and facilities, including the establishment of design standards and common operating procedures. TCTS arranges for the division of system revenues among its members, and they in turn arrange settlements with most of the independent companies. The purpose is to ensure that settlements, which are arrived at through a bargaining process, result in a fair distribution of revenues derived from the provision of a national service.

The Telephone Association of Canada (TAC) was formed in 1921 to promote the exchange of technical and operating information. Its membership includes 13 participants.

The telegraph sector of the industry is dominated by CN-CP Telecommunications, a consortium of the telecommunications departments of Canadian National Railways and Canadian Pacific.



Sending messages by telegraphy is the oldest public telecommunication service in Canada. Traditionally developed in connection with railway operations, it was also offered as a service to the public and various small companies developed for that specific purpose.

By the 1930's the CN and CP railway companies had become the principal providers of the public telegraph service. They also provided the majority of Canada's early transcontinental private wire services. "Private wire" denotes a class of telecommunication in which facilities are placed at the disposal of the lessee for long periods of time to meet his special needs. These services were used first by the CBC and later for weather, air traffic control, and many other business and governmental purposes; in many cases during the 1930's the companies began providing them jointly. However they continued to operate their public message telegraph services competitively; they maintained separate offices in some 70 locations, until, in the face of diminishing revenues and rising costs, they agreed in 1967 on a plan for the reciprocal abandonment of offices.

Co-operation between the CN and CP Telecommunications Systems in the private wire field has continued to develop, based on a formal agreement entered into in 1947. Other similar agreements have been reached; notable among these is the one governing the jointly-operated Telex service which was negotiated in 1957.

The success of these services has to some extent been responsible for the reduction in the use of the public telegraph service. Also, the growth in the use of the telephone has resulted in the decline of the social as distinct from the business type of telegraph traffic.

The Canadian Overseas Telecommunications Corporation (COTC) was incorporated by federal statute in 1949. The principal purposes of this Crown Corporation are: to establish, maintain, and operate in Canada and elsewhere external telecommunications services for the conduct of public communications; and to carry on the business of public communications by cable, radiotelegraph, radiotelephone, or any other means of telecommunication.

COTC operations have been concerned, in practice, with overseas communications, excluding direct service to places in the United States or those more conveniently reached through that country. By means of international-gateway switching-centres in Montreal and Vancouver, public telephone service is provided by COTC to some 200 overseas territories. Public message telegraph service is made available, directly or indirectly, by COTC and two foreign corporations—Western Union International Inc., and the Commercial Cable Company (a subsidiary of International Telephone and Telegraph World Communications Inc.), both of which have retained terminal rights in Canada granted before 1949. COTC is also the "designated operating entity" for Canadian participation in INTELSAT.

Unlike COTC, Telesat Canada, incorporated by federal statute in 1969, has as its principal object the establishment of satellite telecommunication systems providing commercial telecommunications services between locations in Canada. As a general rule the operations of privately-owned communications companies are licensed and regulated either by federal or provincial authorities. Bell Canada, for example, operates under a federal charter and its rates are set by the Canadian Transport Commission. B.C. Telephone is also federally-regulated.

## The Post Office

The Canada Post Office employs some 48,000 people to convey mail from one end of the country to the other, from the populated cities in the south to the far northern extremities of the Arctic.

On February 1, 1971, the Assured Mail Program was launched in Toronto. Plans call for its implementation throughout the country in 1972. The program guarantees next delivery-day service for first class mail if it is addressed to major centres in Canada and if letters are mailed according to schedules advertised on both the ordinary and the specially-marked mail boxes.

By 1974, the Postal Code will be a part of every Canadian address. It is also being implemented gradually and is the forerunner of mechanized sorting in the post office, made necessary by rapidly increasing volumes of mail and serious congestion in urban post offices.

The past several years have also seen a sharp increase in philatelic promotion by the Post Office along with greater attention to the design and selection of stamps.

## The Press

The print media in Canada, as elsewhere, are dominated by a powerful daily press: in 1971, 116 daily newspapers (13 in the French language) served 103 communities and had a combined circulation of 4.7 million, or a total readership representing about three quarters of the nation's households.

As in other countries, there is an increasing trend toward group ownership of the daily press in Canada also: more than two thirds of the dailies today are being produced by just 12 publishing groups—as against a total of 63 publishers producing 110 dailies in 1966.

Serving the needs of the smaller areas of population and the dormitory suburbs of the metropolitan areas are—give or take a few in any one month—about 900 weekly or twice weekly newspapers with a total circulation of about 3 million. About 130 of these are in French.

Playing a unique role on the news media scene in Canada are those newspapers which serve the needs of new Canadians whose mother tongue is neither English nor French. Publications in this category, generally weeklies, total about 110, appear in 14 languages (including one daily in Italian in Toronto) and have a circulation of close to 3 million.

Serving the business, professional, and technical need for knowledge is the professional and business press. Some 510 periodicals offering 118 identifiable classifications of interest in the professions, business, trade, and industry have a combined circulation of 4.4 million.

Cultural and recreational activities of Canadians are reported in some 300 separate publications, most of them monthlies, although some are quarterlies and a few are weeklies. They cover such interests as education, sports, hobbies, religion, entertainment, motoring, boating, travel, the arts, music, and TV and radio.



## Films

### The National Film Board

The National Film Board is Canada's official maker and distributor of films and other visual aids. Its productions, in French and English, are seen in cinemas, on television, in schools and neighbourhood meeting places, in Canada and throughout the world. Versions in many other languages encourage the distribution of NFB films abroad and aid in furthering understanding of Canada, its people, and its way of life.

In Canada, the Board's films are distributed through the normal commercial channels of cinema, television, and print sales, and by loan to those community groups and schools that borrow films and show them under their own auspices. Film-borrowers have access to the film libraries in the Board's offices throughout Canada and, in places where the Board has no office or film library, the films are distributed by public libraries or other community cultural centres.

In other countries, the Board's films and other visual productions are distributed by its own offices, by film companies, by embassies or posts of the Departments of External Affairs and Industry, Trade and Commerce. Many films are introduced through international film festivals, now common to most world centres, where the NFB of Canada is a consistent winner of awards. The Board won 17 of the 40 Canadian Film Awards for 1970.

A growing function of the Board's films both in Canada and abroad is to encourage travel in Canada by presenting an attractive picture of the country to prospective tourists. Travel film libraries are open to borrowers in the United States, Great





A scene from the National Film Board's film, *Below Zero (L'homme et le froid)*.

Britain, France, the Federal Republic of Germany, and several other countries, as well as in Canada.

Long an innovator in style and technique of film production and distribution, the NFB is the first major film organization to make its films available through the new system of electronic video recording (EVR). This system of cartridge TV permits films to be shown on an ordinary television set through an auxiliary unit called a Teleplayer. Past and present production of the NFB will provide several thousand films for distribution by the new method.

The Board's operational headquarters is in Montreal; it contains everything needed for the production and distribution of films from first idea to final prints. Distribution offices, several with cinemas, are maintained in provincial capitals and other cities of Canada, and in many important cities abroad. These offices ensure that the Board's productions reach cinemas, television, and film-borrowers in their areas and advise the public generally on the application of films to particular purposes.

Each year, the Board completes some 600 to 700 films, filmstrips, promo clips, loop films, slide sets, overhead projectuals, and photostories.

During the fiscal year 1970-71 the following were among the films produced: *Below Zero (L'homme et le froid)* showing man's capacity to adapt and thrive in cold regions from Alaska to Finnish Lapland; *Un pays sans bon sens* about the meaning of nationality; *This Was the Time* showing celebrations of Haida Indians; *A Little Fellow from Gambo*, a portrait of Newfoundland's Premier Smallwood; *Les rochassiers*, a study of mountain-climbing; *Espolio*, an animated film from the poem by Earle Birney; *Don Messer—His Land and His Music* about the popular musician; and *Paradise Lost* about the danger of air pollution.

## Private Film Makers

In 1970 the twenty-second annual Canadian Film Awards' presentations took place in Toronto. Sixty-five films were shown in competition to the international jury and to the public during Film Awards Week at the St. Lawrence Centre's Town Hall in Toronto. Fourteen of these were feature films.

Approximately one hundred and thirty-five private film companies and ten government agencies produced film, videotape, and filmstrip productions during the past year. Two thirds of the private companies were small, employing from one to ten persons permanently. Freelance specialists were hired by many private producers during peak periods to handle such creative jobs as script writing, filming, and editing. Seventy-two television stations also contributed considerable film and videotape production. The Canadian film industry supported 16 motion picture laboratories in 1970, of which 13 are located in Toronto, Montreal, and Ottawa.

Young people receive training for the film industry at the Ryerson Institute of Technology and Sheridan College. As in the past these young people discovered that learning by doing is the only route to professionalism.

*Act of the Heart*, starring Geneviève Bujold and Donald Sutherland, was partially financed by the Film Development Corporation.





## Broadcasting

The 1968 Broadcasting Act provided a statutory statement of broadcasting policy for Canada, reinforcing the mandate of the national broadcasting service to be provided by the Canadian Broadcasting Corporation. It also created the Canadian Radio-Television Commission as the single public authority to regulate and supervise all aspects of the Canadian broadcasting system, both public and private.

### The Canadian Broadcasting Corporation

The CBC is a Crown Corporation established by an Act of the Canadian Parliament in 1936 to provide the national broadcasting service in Canada. Its radio and television facilities extend from Atlantic to Pacific and into the Arctic Circle.

**Financing.** The Corporation is financed mainly by public funds voted annually by Parliament. Supplementary revenue is obtained from commercial advertising. As a Crown Corporation the CBC is responsible to Parliament, and reports on its

*Chez Hélène*, a popular children's program is shown on the CBC's English-language television network.







The candy house built for the CBC's television production of the opera *Hansel and Gretel* was later donated to the Hospital for Sick Children in Toronto, Ont.

operations each year through a Cabinet Minister designated in the Broadcasting Act. The CBC's head office is in Ottawa.

**Domestic Operations.** The CBC operates six major domestic services: two television networks, French and English; two AM radio networks, French and English; an FM radio service in five major cities; and a multilingual Northern Service (English, French, Indian, and Eskimo languages) providing medium and shortwave broadcasting to the Canadian north.

**External Operations.** The CBC International Service broadcasts by shortwave in 11 languages to eastern and western Europe, Africa, Australasia, Latin America, the Caribbean, and North America. It also distributes programs to foreign broadcasters by means of music and spoken-word transcriptions, special relay circuits, and television films. In co-operation with the Department of National Defence, the



Chief Dan George, a well-known film star, is interviewed by Elwood Glover of the CBC.

CBC Armed Forces Service provides recorded and shortwave radio programs, television films, and touring entertainment parties for Canadian military bases in Canada and abroad.

The CBC co-operates with many other broadcasters around the world in the production and exchange of programs. It is a member of several international broadcasting organizations. The CBC is also active in program sales to other countries, and participates regularly and successfully in international program competitions. In co-operation with the Canadian International Development Agency and UNESCO, the CBC has sent personnel to aid foreign broadcasting agencies and it provides training for foreign students who come to Canada to learn broadcasting. The CBC maintains offices in London, Paris, Rome, New York, and Washington, as well as news bureaus in Moscow and the Far East.

**Programming.** The CBC produces programs in many fields: news, information, commentary, special events, documentaries, drama, music, variety, sports, religion, science, and the arts, for children and youth, for schools, and for adult education. The CBC's French network produces more hours of TV drama per week than any other broadcasting system in the world. One of the outstanding shows presented in 1970 by the English network was *Hansel and Gretel*, starring Maureen Forrester, with Mario Bernardi conducting a 72-piece orchestra, and Celia Franca's choreography. Humperdinck's operetta was seen by over two and a half million Canadians.



**Audio-Visual Material.** The CBC's English and French networks maintain publications departments which offer for sale the texts of selected programs. Certain CBC music recordings are made available for public sale in co-operation with commercial companies. Tape recordings of CBC broadcasts are provided at nominal cost for educational non-broadcast use.

**Coverage and Facilities.** In 1971, CBC radio service was within reach of 98.6 per cent of the Canadian population, and CBC television was available to 96.6 per cent. Most evening television programming was in colour, and about 18 per cent of Canadian households had colour receivers. There were 388 outlets for the national radio service: 44 CBC-owned originating stations, 244 CBC-owned low-power relay transmitters, and 100 privately-owned affiliated stations. In television, national service outlets totalled 318: 18 CBC-owned originating stations, 101 CBC-owned network relay and rebroadcasting stations, 18 Frontier Coverage Packages (stations in the Canadian north which are programmed by film recordings), and 43 privately-owned affiliates with their 156 rebroadcasting stations.

### Private Broadcasting

In 1970, 595 privately-owned broadcasting stations operated in Canada. There were 270 AM stations, 70 FM, 6 shortwave, and 249 television stations, and their assets totalled \$176,871,957. Most recent Statistics Canada figures show that private radio employs 6,292 persons and private television 4,114. Annual expenditure on wages, benefits, artists, and other talent fees, was \$78,946,543. Average weekly

One of the CTV network's most popular shows is *Anything You Can Do*.





salaries were \$173.38 in 1970. Ninety-five per cent of these private stations belong to the Canadian Association of Broadcasters, the industry's voluntary trade association. In 1969, 78 per cent of private radio stations earned an average profit before taxes of \$6,197; the other 22 per cent reported average profit before taxes of \$182,085. In the private TV industry, 16 per cent of stations had profits before taxes of less than \$4,800; 39 per cent showed average profit before taxes of \$16,429; 25 per cent reported an average profit before taxes of \$1,044,780; the middle group of 24 TV stations earned an average of \$155,817. Twelve private television stations own and operate the CTV network, which reaches 4,282,000 Canadians daily.

CTV and *Radiodiffusion Mutuelle Limitée* are network members of the Canadian Association of Broadcasters. CAB's head office is in Ottawa; branch offices, in Toronto and Montreal, operate Program Exchange departments to gather and distribute many Canadian and some foreign programs. CAB, through its Ottawa radio bureau division, also produces private radio's longest-running public service series, "Report From Parliament Hill." These non-partisan reports by federal Members of Parliament began in 1944 and have run continuously on many stations (77 in 1970). For many years CAB sponsored the Dominion Drama Festival and continues a program of in-station training for foreign students.

Graham Kerr, the Galloping Gourmet, is well-known throughout the English-speaking world. His shows are produced in the Bushnell studios in Ottawa, Ont.



## Libraries

Public library service, supported by local and provincial funds, is offered in all ten provinces. Each province has a public library agency or commission; some are merely advisory, others exercise considerable control over the development of library service. All the provinces now provide service on a larger unit basis, or are considering doing so, and provincial legislation generally encourages co-operation on a regional basis. The federal government supports regionalized library service in the Yukon and the Northwest Territories, and a start has been made towards providing library service to the Indian bands.

The emphasis in school libraries has shifted from the conventional concept of the library as a collection of printed material to that of a multi-media "resource centre." College and university libraries have gone through a period of very rapid growth, but a slowing down of their expansion is now apparent as the upper limits of financial support are reached. A survey of the library resources which support graduate studies in the universities has been conducted by the National Library, and when the results of this survey are available, more rationalization of acquisition policies and greater sharing of resources will tend to offset this slowdown.

Special libraries in Canada number nearly 1,000. These include company and government libraries (close to 300) as well as the libraries of associations and institutions such as museums, hospitals, and so on. Each province maintains a legislative library. The greatest concentration of government libraries (about 85) is in Ottawa. The largest collections are those of the National Library, the National Science Library, the Library of Parliament, and the Department of Agriculture Library.

The National Research Council Library, which serves as the National Science Library, specializes in the natural sciences and technology. Among its services to the scientific research community is a computer-based Selective Dissemination of Information (SDI) service to researchers, based on their interest profiles.

The National Library of Canada specializes in the fields of Canadiana, the humanities, and the social sciences. It administers the legal deposit regulations of the new National Library Act (1969) and publishes the national bibliography *Canadiana*, a monthly bibliography of Canadian books, government publications, pamphlets, records, and films. It maintains the National Union Catalogue, a card catalogue listing the books held by some 300 Canadian libraries. Through this catalogue, the National Library provides libraries and researchers with locations for needed material. Many Canadian libraries are linked by Telex, which accelerates the exchange of information and loans between libraries.

Rapidly increasing costs have led to pressure on libraries to share their resources. The terms of the National Library Act make it possible for the National Library to take the lead in plans for co-ordination of library resources and services, and, to this end, a Research and Planning Branch has been established in the Library. In consultation with specialists from other government libraries and from university and large public libraries, the National Library is studying the possibility of establishing a computer-based library information network in Canada.

Eight Canadian universities now offer degrees in library science and there are an increasing number of post-secondary courses in the community colleges for the

training of library technicians. As the application of automation to library operations increases, systems analysts, computer programmers, and information scientists are being added to library staffs. At the same time, the demand for subject specialists in the larger libraries is drawing other professional personnel into the library field.

## Archives

Archives are repositories of original documents relating certain phases of the development of the country. Archivists select these documents, preserve them, and make them available to researchers and the public. The Public Archives of

The National Library and the Public Archives building is one of the most handsome government buildings in Ottawa, Ont.







One of the convenient reading rooms provided by the Public Archives and National Library is the periodical room where historical newspapers are available to scholars.

Canada, a department of the federal government, fulfils these functions for documents of national significance, whether they originate in the federal administration, commercial or cultural societies, or individuals who have distinguished themselves in the fields of politics, the public service, business, science, the arts, or letters. These documents may take the form of manuscripts, maps, prints, pictures, sound recordings, or films. In 1967, the Public Archives moved to a spacious new building which it shares with the National Library.

All provinces have public archives which play a similar role at their level, and the Territories are in the process of setting up their own archives. Many institutions also have collected archival holdings, which they put at the disposal of researchers and a more or less restricted public. For the most part these institutions are large public libraries, or those of universities, and historical societies. Many cultural, religious, and commercial societies maintain their own archives; these are generally open to specialized researchers, but usually they do not have facilities for the general public.

The field of archives is in a period of great transformation. Access to documents is given more freely, and inter-repository loans of microfilm facilitate communication. An increasing interest in audio-visual documentation has led to changes in emphasis. Finally, new computer applications give hope for a more rapid and economical preparation of finding aids, which should make for greater accessibility to this enormous but under-exploited mass of documents.

# acknowledgements

## Contributors

Donald E. Armstrong (*Economics*), President of the Financial Research Institute, McGill University, Montreal, Que.; governmental consultant; and director of research. B.A., B. Comm., Alberta, 1950; Ph.D. Economics, McGill, 1954. Author of *An Introduction to Economics* (Toronto, 1959); with John Lindeman, *Policies and Practices of United States Subsidiaries in Canada* (the National Planning Association (U.S.A.) and Private Planning Association of Canada, 1961); and numerous articles.

Jean-Charles Bonenfant (*Government*), director of the Library, Assemblée Nationale du Québec and professor at the Université Laval. Author of *Les Institutions politiques canadiennes* (Québec, 1954) and *La Naissance de la Confédération* (Québec, 1969).

Fred Bruemmer (*Eskimos*), freelance photographer and journalist who spends a major part of each year in the north visiting settlements and living with the Eskimos and Indians at their hunting and fishing camps.

Ramsay Cook (*History*), F.R.S.C. Professor of History, York University, Toronto, Ont. B.A. Manitoba, 1954; M.A. Queens, 1956; Ph.D. Toronto, 1960. Author of *The Politics of John W. Daffoe and The Free Press* (Toronto, 1963); *Canada: A Modern Study* (Toronto, 1964); *Canada and the French Canadian Question* (Toronto, 1966); *Provincial Autonomy, Minority Rights and the Compact Theory, 1867-1921* (Royal Commission on Bilingualism and Biculturalism, 1969, in French also), and numerous articles.

Eugene Forsey (*Government*), F.R.S.C. member of the Senate; member, Advisory Council of the Institute of Social and Economic Research, Memorial University, Nfld.; member, Ontario Advisory Committee on Confederation; visiting professor Waterloo University, 1970-71; governor, Trent University. B.A. McGill, 1925; M.A. 1926; B.A. Oxford, 1928; Ph.D. McGill, 1941. Author of *Economic and Social Aspects of the Nova Scotia Coal Industry* (McGill Economic Studies, no. 5, Toronto and Montreal, 1925), and *The Royal Power of Dissolution of Parliament in the British Commonwealth* (Toronto, 1943; revised edition, 1968).

L.-E. Hamelin (*Canadian Arctic*) B. ès A., Montréal, 1945; M. ès L., Laval, 1948; D. ès L., Grenoble, 1951. First director (1955-61) of the Institut de Géographie, and founder and director of the Centre d'Études nordiques, Université Laval. Author of *La Géographie "difficile"* (Québec, 1952, 1967); *Le Périglaciaire par l'image/Illustrated Glossary of Periglacial Phenomena* (Québec, 1967) with Frank A. Cook; *Atlas du monde contemporain* (Montréal, 1967), in collaboration; and numerous other books and articles.

The Very Rev. Dr. Ernest Marshall Howse (*Religion*). Minister emeritus, Bloor Street United Church, Toronto, Ont. B.A. Dalhousie, 1929; S.T.M. Union Theological Seminary, New York, 1932; Ph.D. (History) Edinburgh, 1934; D.D. United

College, Manitoba, 1948; D. Litt. Newfoundland, 1965. Author of *Our Prophetic Heritage* (Toronto, 1945); *The Law and the Prophets* (Toronto, 1947); *Saints in Politics* (Toronto, 1952, 1960); *Spiritual Values in Shakespeare* (New York, 1955); *The Lively Oracles* (London, 1956); *People and Provocations* (Toronto, 1965), and numerous articles.

John Warkentin (*Physical Geography*), B.Sc. Manitoba, 1948; M.A. Toronto, 1954; Ph.D. Toronto, 1960. Professor in Geography, York University. Author of *The Western Interior of Canada* (Toronto, 1964); and editor of *Canada: A Geographical Interpretation* (Toronto, 1968).

## Photographic Credits

- |                                                                               |                                                             |
|-------------------------------------------------------------------------------|-------------------------------------------------------------|
| Alberta Department of Industry and Tourism p. 257                             | Canadair Limited pp. 222, 297                               |
| Alcan Aluminum Company of Canada Limited p. 299                               | Canadian Broadcasting Corporation pp. 322, 323, 324         |
| Banque Canadienne Nationale p. 260                                            | Canadian Executive Service Overseas p. 169                  |
| A. Betts Photography/P.C. Engineering Limited p. 108                          | Canadian Film Development Corporation p. 321                |
| Brigden's Photo/Graphics Limited p. 51                                        | Canadian Government Travel Bureau pp. ii, 101, 211          |
| Bramalea Consolidated Developments Limited p. 246                             | Canadian International Development Agency pp. 166, 167, 168 |
| British Columbia Department of Travel Industry p. 39                          | Canadian International Paper Company p. 221                 |
| British Columbia Hydro and Power Authority p. 240                             | Canadian National Institute for the Blind p. 134            |
| Bruemmer, Fred pp. 22 (2), 24, 25 (2), 41, 42, 43, 44, 45                     | Canadian National Railways pp. 291, 316                     |
| Canada Department of Agriculture pp. 72, 208, 209, 213, 215                   | Canadian Pacific Railways p. 286                            |
| — the Environment pp. 75, 76, 218, 223, 225                                   | Canadian Paraplegic Association p. 125                      |
| — External Affairs pp. 104, 151, 155, 156, 159, 160, 161                      | Canadian Press p. 102                                       |
| — Fisheries Research Board of Canada, Freshwater Institute p. 74              | Canadian University Service Overseas pp. 170, 171           |
| — Manpower and Immigration p. 97                                              | Canadian Westinghouse Company Limited p. 142                |
| — National Defence pp. 164 (2), 165                                           | Carlson, M/Cpl. Eric/Canadian Armed Forces p. 163           |
| — National Health and Welfare pp. 120, 121, 122, 123, 127, 129, 131, 133, 135 | Central Mortgage and Housing Corporation pp. 249, 250 (3)   |
| — National Research Council pp. 69, 71                                        | Churchill Falls (Labrador) Corporation Limited p. 241       |
| — Privy Council Office/Science Secretariat pp. 64 (2), 66, 67                 | CJOH-TV pp. 325, 326                                        |
| — Veterans Affairs p. 137                                                     | Ellefsen Ltée, Les Photographes/Port Manager, Quebec p. 284 |
| Canada Courier p. 216                                                         |                                                             |



- External Affairs/Canadian Press p. 153  
 Falconbridge Nickel Mines Limited  
   p. 231  
 Fleetham Storage and Services Limited  
   p. 290  
*Gazette* p. 311  
 Giroux, Michel/Steinberg's Limited  
   p. 281  
*Globe and Mail* pp. 110, 112, 126, 146  
 Gulf Oil Canada Limited p. 285  
 Hamelin, Louis-Edmond p. 25  
 Hamelin, Philippe p. 27  
 Harrington, Richard pp. 3, 17, 46, 115,  
   206, 210, 305  
 Holzapfel, Marie-Louise, Berne/*Foreign  
 Trade* p. 304  
 Hunter, George pp. 5, 6, 9, 10, 12, 34, 41,  
   87 (3), 89, 140, 174, 178, 181, 184,  
   202, 203, 217, 226, 228, 229, 232,  
   235, 238, 244, 245, 277, 282, 287,  
   294, 297, 308, 309  
 Hunter, George/Energy, Mines and  
   Resources pp. 236, 237  
 Hydro-Québec p. 242  
 Industrial Development Bank p. 255  
 Industrial Development Board p. 33  
 Island Lodge, Ottawa p. 133  
 Kalen, Henry/MacFarlane  
   Communications Services p. 50  
 Kent, Brian/Vancouver Sun p. 319  
 Lambert, Paul p. 51  
 LeCoz, André/Le Théâtre du Nouveau  
   Monde p. 49  
 Loblaws p. 148  
 McCain Foods Limited pp. 139, 143  
 Malak cover, pp. 4, 79, 81, 83 (3), 87,  
   93, 103, 107, 109, 118, 124, 190, 197,  
   198, 207, 219, 227, 259, 271, 276,  
   280, 292 (2), 310  
 Manitoba p. 274  
 Manitoba Department of Education  
   p. 117  
 Muller's Meats Limited p. 212  
 Murray, James A. p. 191  
 National Film Board pp. 7, 94, 116, 145,  
   149, 224, 230, 302 (2), 315, 320,  
   328, 329  
 National Gallery of Canada pp. 60, 61  
 National Youth Orchestra Association  
   of Canada p. 56  
 Neptune Theatre Foundation p. 49  
 New Brunswick Travel Bureau p. 312  
 Nova Scotia Information Service p. 77  
 Nova Scotia Travel Bureau p. 30  
 Office du Film du Québec p. 188  
 Office d'information et de publicité du  
   Québec pp. 195, 214  
 Onoszko, Alex p. 58  
 Ontario Department of Tourism and  
   Information pp. 19, 87  
 Patterson, Freeman pp. 14, 16, 18, 38, 83  
 Patterson, Freeman/National Film  
   Board p. 13  
 Prism Photo Associates pp. 130, 272,  
   275  
 Quebec Department of Tourism, Fish  
   and Game p. 31  
 Ron Vickers Limited p. 145  
 Robin Hood Multifoods Limited/  
   *Foreign Trade* p. 313  
 Royal Winnipeg Ballet p. 55  
 St. Lawrence Centre for the Arts p. 48  
 St. Lawrence Seaway Authority p. 204  
 Toronto Transit Commission p. 289  
 Trans Mountain Oil Pipe Line  
   Company p. 239  
 Vancouver Sun pp. 193, 283, 288  
 Ron Vickers Limited, p. 145  
 Whitely T./Alberta Outdoor Education  
   Consultant p. 114  
 Willey & Clark/Guelph Spring Festival  
   p. 53

# index

- Aged**, services for . . . . . 133, 134, 252
- Agriculture . . . . . 197-217
  - Department of . . . . . 199-200
- Agricultural research. . . . . 72-3
- Appalachian Region . . . . . 4-6
- Archives . . . . . 328-9
- Arctic, the . . . . . 20, 21-7
- Arts, the . . . . . 47-62
  - Government and . . . . . 47
  - visual . . . . . 59-60, 325
- Atomic energy. . . . . 65, 245
- Aviation, civil . . . . . 295-7
  
- Balance** of international
  - payments . . . . . 303-8
- Ballet. . . . . 50, 54-6
- Bank of Canada . . . . . 262
- Banking and savings . . . . . 259-61
- Bilingualism . . . . . 36, 94-5
  - Programmes Branch. . . . . 95
- Births . . . . . 91
- Blind persons allowances. . . . . 132
- Books . . . . . 61-2
- British North America
  - Act. . . . . 33, 99, 100, 102, 105
- Broadcasting . . . . . 322-6
  
- Cabinet**, federal. . . . . 103-5
- Caisses populaires*. . . . . 261
- Canada Council. . . . . 47, 62
  - — grant . . . . . 58, 59
  - Pension Plan . . . . . 128, 136
- Canadian Broadcasting
  - Corporation . . . . . 322-6
  - constitution . . . . . 101, 102
  - Executive Service Overseas (CESO) . . . . . 169
  - International Development Agency (CIDA) . . . . . 166-8
  - North. . . . . 23-7
  - Shield . . . . . 8-11
- University Service Overseas (CUSO) . . . . . 170-1
- Canals . . . . . 294-5
- Capital expenditures . . . . . 246-8
- Census of Canada . . . . . 88-91
- Central Mortgage and Housing Corporation . . . . . 251
- Child welfare. . . . . 132
- Chronic illness and rehabilitation. . . . . 124-6
- Citizenship . . . . . 109-10
- Civil aviation. . . . . 295-7
- Climate . . . . . 14-20, 23-5
- Coal . . . . . 236-7
- Collective bargaining. . . . . 142-3
- Colombo Plan . . . . . 153-4
- Commonwealth relations . . . . . 152-4
- Communications . . . . . 314-7
  - Department of . . . . . 65
- Constitution, Canadian . . . . . 101, 102
- Construction . . . . . 249-51
- Consumer and corporate affairs. . 148-9
  - credit. . . . . 277-8
  - price index. . . . . 280-1
- Co-operatives . . . . . 279-80
- Cordilleran Region. . . . . 12-3
- Credit unions. . . . . 261-2
  
- Dairying**. . . . . 213-5
- Dance . . . . . 54-6
- Deaths . . . . . 91
- Defence Industrial Research
  - Program . . . . . 67
  - Industry Productivity Program . . 67
  - national . . . . . 162-5
  - Research Board . . . . . 65-6
- Disabled persons allowances. . . . . 132
- Disarmament. . . . . 160
- Domestic trade . . . . . 272-81
- Drug abuse. . . . . 127
  
- Economic** Council of Canada. . . . 192-6
  - growth. . . . . 180-5

- Economics ..... 173-9
- Economy, the ..... 180-91
- Education ..... 111-8
  - administration ..... 117-8
  - adult ..... 115
  - assistance ..... 118
  - elementary and secondary ..... 111-4, 117
  - expenditures ..... 118
  - school organization ..... 113-4
  - statistics ..... 117
  - universities ..... 115-6, 118
  - vocational and technical ..... 114-5
- Electric power ..... 240-3
- Embassies and posts abroad ..... 150
- Employment ..... 263-6
- Energy ..... 65, 240-5
- Eskimos ..... 41-6, 217
- Exports ..... 293-4, 300, 303
- External Affairs, Department of . 150-61
  - aid programs ..... 166-71
  - relations ..... 150-61
- Family allowances** ..... 130-2
  - Planning Program ..... 127
- Farm Credit Corporation ..... 200
  - exports ..... 197, 204-6
  - income ..... 200-1
  - legislation ..... 199-200
  - production ..... 203-9
- Federal Government ..... 99-107
  - assistance programs ..... 66-9
  - finance ..... 252-5
  - research ..... 64-6
  - science policy ..... 64
- Federal-provincial programs ..... 252-5
  - fiscal arrangements ..... 257
- Festivals ..... 53-4, 57-8
- Field crops ..... 202-9
- Films, motion picture ..... 319-21
- Finance ..... 246-62
  - capital expenditure ..... 246-8
  - federal government ..... 252-5
  - federal-provincial ..... 252-5, 257
  - municipal ..... 258
  - non-bank institutions ..... 261-2
  - provincial government ..... 255-7
- Fisheries ..... 224-7
  - Research Board ..... 73-4
- Foreign policy ..... 161
  - trade ..... 298-312
- Forest industries ..... 220-2
  - management and research . 75-6, 219
- Forestry ..... 218-23
  - research ..... 75-6
- Forests ..... 218-9
- Fruits ..... 206-8
- Furs ..... 216-7
- Gas, natural** ..... 238-40
- Geography ..... 1-13
- Government ..... 99-108
  - federal ..... 99-107
    - grants, educational ..... 118
    - for welfare ..... 134
  - municipal ..... 108
  - provincial ..... 108
  - territorial ..... 25-7, 108
- Governor General ..... 62, 103
- Grains, production of ..... 202-4
- Gross national product (GNP) ..... 180, 182, 183
- Guaranteed income supplement. 129-30
- Harbours** ..... 294-5
- Health ..... 119-27
  - grants ..... 123-4
  - research ..... 70-1
  - resources fund ..... 122-3
  - services ..... 119-27
- History ..... 29-36
- Hospital insurance ..... 121-2
- House of Commons ..... 106-7
- Housing ..... 249-51
- Hydro-electric power ..... 240-5
- Immigration** ..... 96-8
- Imports ..... 300-1, 303
- Income, national ..... 182
  - personal ..... 182, 185
  - tax ..... 255-7
- Indian Affairs and Northern Development, Department of ..... 66
- Indians ..... 37-40



- Industrial growth ..... 186-91
  - research ..... 67-8
  - and Development Incentives Act (IRDIA) ..... 67
  - institutes ..... 68
  - programs ..... 67
  - Technology Program ..... 68
- Industry, Trade and Commerce, Department of ..... 313
- Insurance companies ..... 262
  - hospital ..... 121-2
  - unemployment ..... 144
- Interior Plains ..... 11
- International payments ..... 303-8
  - social development and security. 135
  - trade ..... 298-308
  - welfare ..... 135
- Irrigation ..... 1-4
- Judiciary** ..... 107
- Labour** ..... 263-6
  - and manpower ..... 138-49
  - collective bargaining ..... 142-3
  - earnings ..... 266
  - force ..... 263-5
  - legislation ..... 138-42
- Land ..... 1-13
- Languages Administration Branch.. 95
- Legislature ..... 105-7
- Libraries ..... 327-8
- Livestock ..... 209-12
- Logging ..... 219-20
- Lumber ..... 220
- Manpower, labour and** ..... 138-49
  - programs ..... 126, 146-7
- Manufacturing ..... 267-71
  - statistics ..... 269-70
- Mass media ..... 314-7
- Medical care program ..... 120-1
  - insurance ..... 120-1
  - research ..... 70-1
  - Council ..... 70-1
  - services ..... 120-7
- Mental illness ..... 126
- Minerals ..... 11, 228-40
  - fuels ..... 234, 236-40
  - metallic ..... 233
  - non-metallic ..... 233-4
  - production of ..... 233-5
- Municipal government ..... 108
  - finance ..... 258
- Music ..... 56-9
- National Arts Centre** ..... 47
  - defence ..... 162-5
  - Film Board ..... 319-20
  - Gallery of Canada ..... 58-9
  - health grants ..... 123-4
  - Housing Act ..... 251
  - Library ..... 327
  - parks ..... 84-5
  - Research Council .... 64, 67, 71, 327
  - welfare grants ..... 134
  - Youth Orchestra ..... 56-7
- Native peoples ..... 37-46
- Natural resources ..... 197-245
- Newspapers ..... 318
- North Atlantic Treaty Organization (NATO) ..... 161
- Nuclear power ..... 245
- Official Languages Act** ..... 94
- Oil ..... 238-40
- Old age security ..... 128-30
- Opera ..... 56-7
- Parks** ..... 84-5
- Parliament ..... 99-107
- Pensions ..... 128-30, 136
- Petroleum ..... 238-40
- Pipelines, oil and gas ..... 238-9, 283
- Pollution ..... 116, 119, 176
- Population ..... 88-93
  - by age ..... 90, 92
  - by marital status ..... 92
  - by province ..... 88
  - by sex ..... 90
  - growth ..... 91
  - rural and urban ..... 90
- Poultry and eggs ..... 215
- Post Office ..... 318

Press, the .....	318
Prime Minister .....	104
Privy Council .....	104-5
Provincial government .....	108
— finance .....	255-7
— research councils .....	68
Pulp and paper .....	221-3

<b>Queen, the</b> .....	102-3
-------------------------	-------

<b>Radio</b> .....	322-6
Railways .....	291-3
Recreation .....	81-7, 114, 124
Regional Economic Expansion, Department of .....	147
Religion .....	77-80
Research .....	63-76
— agricultural .....	72-3
— fisheries .....	73-4
— forestry .....	75-6
— government .....	64-8
— health science .....	70-1
— industrial .....	67-8
— medical .....	70-1
— scientific .....	63-76
— university .....	69
Retail trade .....	272-6
Roads .....	289-90

<b>Sawmills and planing mills</b> .....	220
St. Lawrence Lowlands .....	6-8
St. Lawrence Seaway .....	294-5
Scientific research and development .....	63-76
Senate .....	105
Shipping .....	294-5
Social Action Branch .....	95
— assistance .....	132
— welfare .....	128-35
Special events and sports .....	85
Supreme Court of Canada .....	107

<b>Taxes</b> .....	252-8
Telecommunications .....	314-7
Television .....	322-6
Territorial organization .....	25-7
Theatre .....	47-53
Thermal power .....	243-5
Tourist trade .....	309-13
Trade .....	150-60, 272-8, 298-308
— domestic .....	272-81
— international .....	298-308
— retail .....	272-6
— service .....	276-7
— wholesale .....	278
Transport, Ministry of .....	66
Transportation .....	282-97
— developments .....	284-9
Travel industry .....	309-13

<b>Unemployment</b> .....	176, 264
— insurance .....	144
United Nations .....	151-2
Universities and colleges ..	115-6, 118
— research .....	69

<b>Vacations, regulations</b> .....	139
Vegetables .....	206-9
Veterans Affairs, Department of ..	136-7
Vital statistics .....	91-3

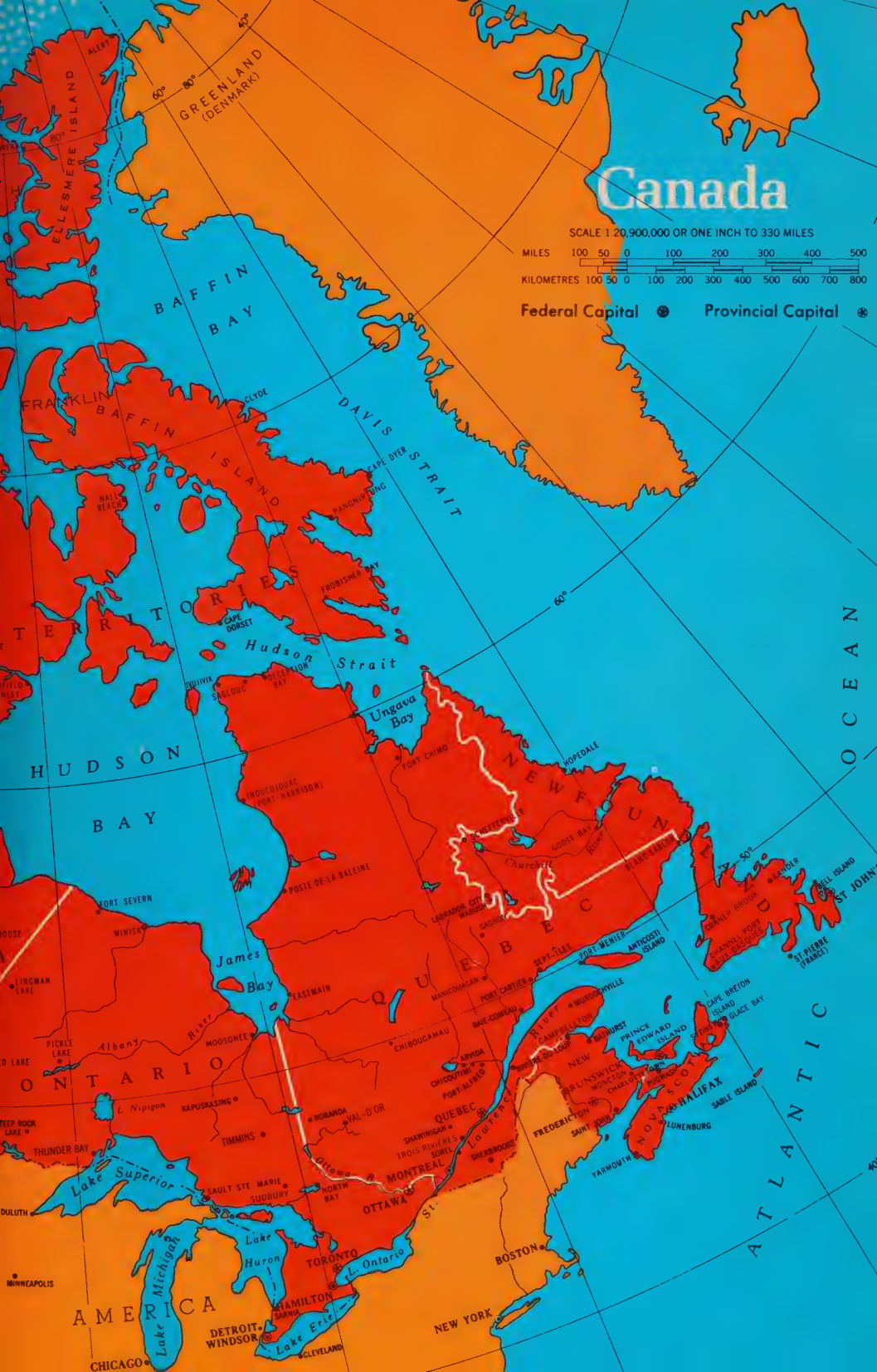
<b>Wages</b> .....	138, 264-6
— average .....	264-5
— minimum rates .....	138
Water power resources and developments .....	243
Welfare services .....	132-5
Wheat exports .....	202-3, 300
— production .....	205
Wholesale trade .....	278
Writing .....	61-2

<b>Youth allowances</b> .....	130-2
— Orchestra, National .....	56-7



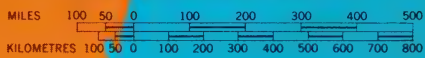




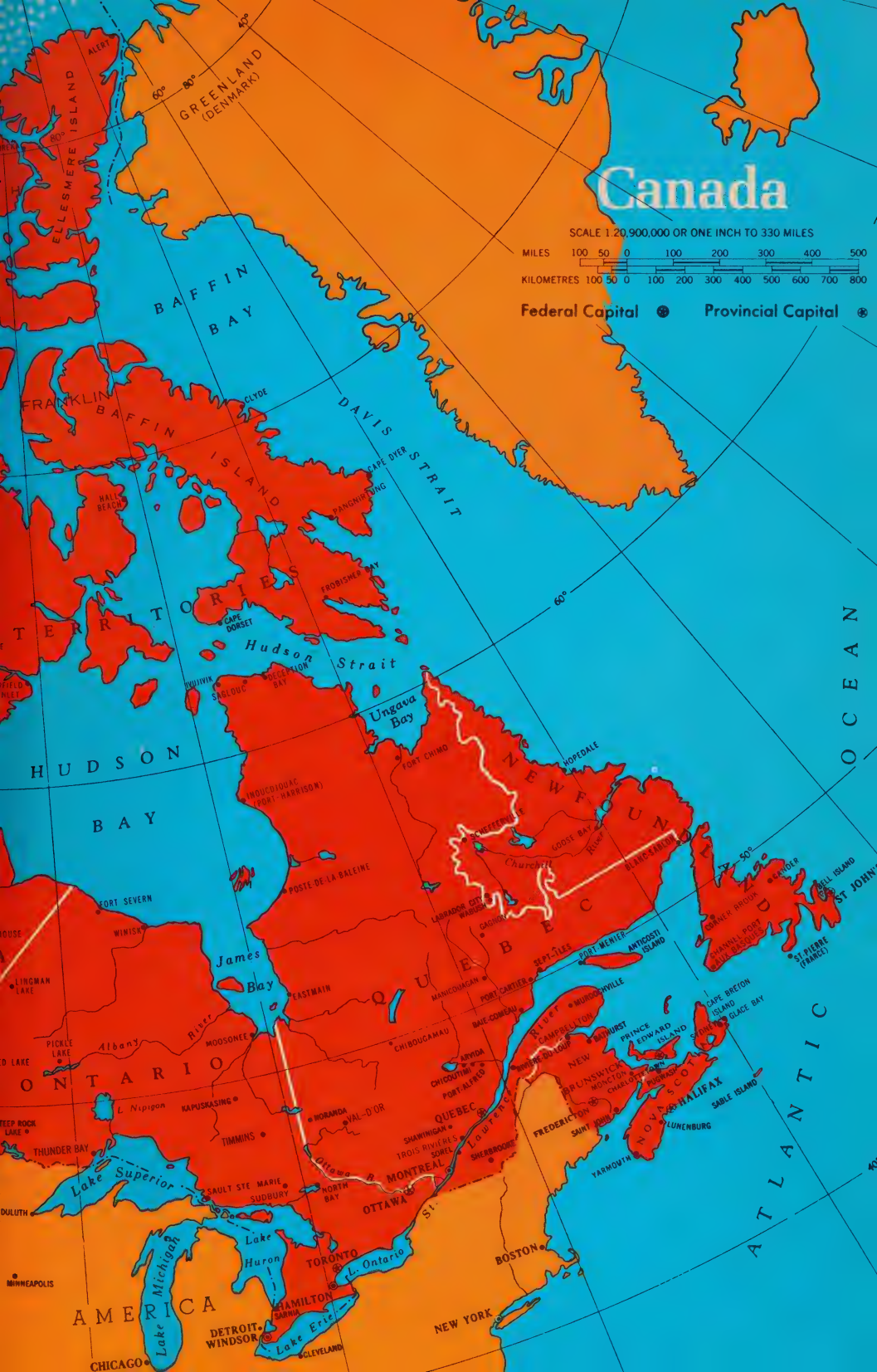


# Canada

SCALE 1:20,900,000 OR ONE INCH TO 330 MILES



Federal Capital ● Provincial Capital \*















ment  
communications

BINDING SECT.

JUN 1 1972

Government  
Publications

~~HE~~  
~~HE~~  
~~HE~~

1972  
cop.2

Canada. Bureau of Statistics  
Canada

Government  
Publications

PLEASE DO NOT REMOVE  
CARDS OR SLIPS FROM THIS POCKET

---

UNIVERSITY OF TORONTO LIBRARY

---

DECATALOGUED



